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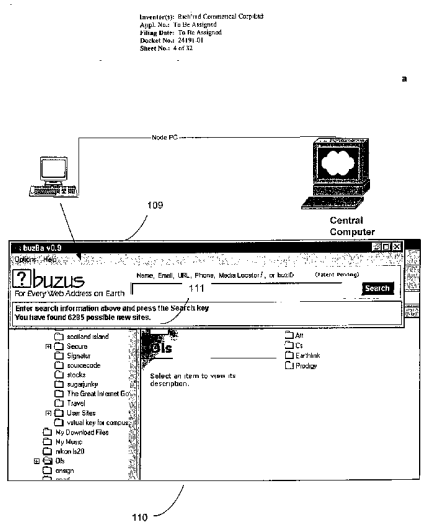

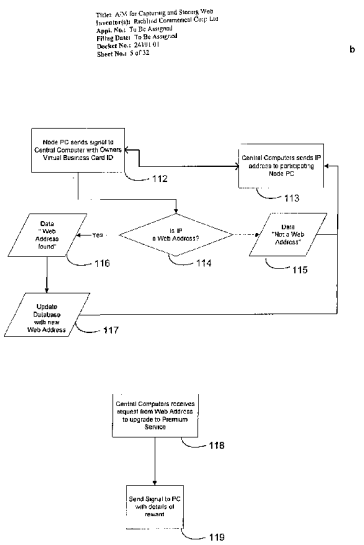

(57) Abstract: A method and system are described for creating, editing, expanding, supporting, protecting, searching, displaying and distributing a database (234) that appears to contain information about every web address, individuals associated with a web site and keywords such as registerd trademarks. In particular, the invention networks an unlimited number of computers (107) connected to the Internet (106) to discover new domain names and update details of existing domain names. This invention rewards users who participate in maintaining and updating the data within the system. The invention expands the database in real time response to a search request so that it appears to contain information about every web address, individuals associated with a web site and keywords such as registered trade marks.

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APPARATUS AND METHOD FOR CAPTURING AND STORING WEB ADDRESSES IN A DATA BASE

Note: See Definitions and Acronyms at the end of the application for words and phrases whose meaning may not be clear.

Background of the invention

Every PC connected to the Internet is assigned a unique number called an IP address. The numbering system comprises four sets of numbers each of which can have a value from 1-255 for example 61.12.244.2. This creates a potential range in excess of 4.2 billion addresses. As these numbers are difficult to remember a system was created whereby a person who wishes to access a particular Web Site could type in a word or phrase in English called a domain name. For example: www.yahoo.com. The WWW stands for World Wide Web and tells the Visitor that the domain is a Web Site that may be viewed using a browser such as Internet Explorer.

This system created a hierarchical structure. At the top of the hierarchy domain names use various extensions such as .COM and .MIL to give a Visitor some indication of the nature of the Web Site. Such Web Sites are not defined by geographical location though many of them are in North America by historical accident. In the above examples COM stands for Company and MIL for Military. The next level down allocated each country a two-letter code such as FR for France and US for USA. Each country has a body that decides the rules under which a Web Site may be registered and the conventions for further sub-names. Some countries such as Japan and Spain require the owners of the Web Site to have residence or trading activity in that country in order to be able to register a Web Site with their country extension. Some countries require that the extension include a component such as CO (for Company). For example the Isle of Man (IM) will register a Web Site in the format www.yourWeb Site.co.im but would refuse to register a Web Site simply called www.yourWeb Site.im. Western Samoa (WS) is happy to register www.yourWeb Site.ws.

Many larger companies break their Web Sites into a number of components and store each part on a separate server. Each server is allocated a separate sub-domain name. For example www.microsoft.com is a cluster of servers that acts as a gateway to all of the Microsoft system. www.msn.microsoft.com is a cluster of servers that handles just the Microsoft Network business. In this example the use of a dot rather than a forward slash alerts the Visitor that the MSN Web Site is not a sub-directory but a separate machine with its own IP address.

By contrast many smaller companies decide not to have their own domain name. The reason may be cost or the absence of technical staff. Their Web Site is usually a set of HTML pages that sit in a sub-directory of another company's domain. For example: www.geocities.com/sites/myWebSite/index.html. The use of the forward slash alerts the Visitor to the fact that this Web Site is a collection of pages managed by a user of the Geocities Web Site. In this

example Geocities is acting as a Host, providing storage space and technical assistance but is not responsible for the content.

An entity that registers new domain names is called a Domain Name Registry. To become a registry the relevant governing body must license the company. For example to register Top Level Domain Names a company must first approach ICANN and obtain a license. Each country has its own organization and rules as to who may become a Registry and the terms under which they may operate. Some countries operate a monopoly system. Others permit several companies to operate to encourage competition. But common to all is the requirement to share information for a number of practical reasons. If Registries did not share information two could register the same name. Key information about ownership is also required to be publicly available so that disputes over trademark and other practical issues may be easily resolved. This information is displayed in a database known as a "whois" database. As it's name implies you enter the domain name and, if the domain name has been registered, you will see who is the owner of the domain.

There are a number of problems with this system. First there is no single public resource that covers every domain in every country. Second different countries display different amounts of information and in different ways. The UK whois database for example only display the owners' name but no other information. Some countries do not even have a whois database. Third the information may only be searched by domain name. If you know the name of a Web Site owner but not their Web Site you are unable to search a whois database. This same restriction prohibits a Searcher of a whois database from seeing associations and cross-references. It is impossible to see that the owner of a specific domain name also owns another domain name. Fourth the design of the whois system makes changing information difficult. Thus many domain owners don't bother to provide notification of changes. Fifth the convention requires every user of the Internet to type in domain names in the English language. This creates an enormous barrier to the development of the Internet in non-English speaking countries. The best way to understand the significance of this is to imagine if you had to type every domain name you wished to visit in Chinese. This means every PC must be equipped with a keyboard labeled with Chinese characters and every user must be trained to understand the Chinese language to a degree that they can type Chinese characters. This is the restriction that the present system imposes. Sixth no whois database can be searched via a WAP device. Finally the whois system will not list ownership details of any web site hosted by another company as previously described in the Geocities example.

If the Internet was being built today with the benefit of hindsight two solutions to some of these problems might have been proposed. In the first solution there would be a single registration authority and a single database containing every domain name. This would enable a universal standard. However the political and cultural differences between countries would make this solution very unpopular and incapable of obtaining universal acceptance. The second solution would be to put

in place a system that would require all registries worldwide to integrate with each other in real time to provide a global whois database. While theoretically possible in practice it would be almost impossible to get that level of co-operation worldwide.

The System resolves the fundamental issue by looking afresh at the basic assumptions. If it were possible to create a global whois what would be its value? As a Searcher it is desirable to be able to search for the ownership details of every Web Address and find an answer. When searching for a specific web address the only relevant information is the answer to that specific question. It does not matter if the database contains 1 entry or 100 million provided that it contains the answer to the specific question. Thus a database that appears to contain every Web Address on earth is as valuable as one that actually does.

Summary of the Invention

The present invention provides a method and system for creating, editing, expanding, supporting, protecting, searching, displaying and distributing a database that appears to contain information about every Web Address, individuals associated with a Web Site and keywords such as registered trade marks.

The invention provides a method and system for creating and maintaining a database by networking an unlimited number of computers connected to the Internet to discover new domain names and update details of existing domain names. There are over 4.2b IP addresses each of which might be used by a Web Site. There is no public resource where one can go and check. The present invention creates such a resource by testing each IP address to see (a) if it is in use and (b) if the user is a Web Site. This is done by a network of computers under the direction of a Central Computer. The results of the testing are then sent to the Central Computer that creates or updates the relevant record.

The invention provides a method and system for rewarding users of the System who participate in maintaining and updating the data within the System. There are two ways in which a Visitor to the System can participate and be rewarded. The active method is for a Visitor to send an e-mail to a Record Manager alerting them to mistakes or encouraging them to provide more detail about themselves. The system records the Virtual Business Card ID's of a Visitor making such suggestions. If the Record Manager then upgrades to a premium subscription the Visitor receives a commission. The passive way is for the Visitor to check a box on the Search Bar that activates the Zoë system. This then permits their computer's spare CPU and RAM to be used as part of the Network described in Claim 1.

The invention provides a method and system for expanding the database in real time in response to a search request so that it appears to contain information about every Web Address, individuals associated with a Web Site and keywords such as registered trademarks. When a search is

made for a Web Address that is not in the database a routine runs which finds the key identity information, creates a new record and then displays it. This process typically takes a few seconds. Thus the database appears to contain every web address creating new records in response to search requests.

The invention provides a method and system for protecting an on-line Database from being copied by computer programs such as Spiders or Crawlers as well as individuals seeking to copy multiple records, while transparently permitting human requests to pass through. Many companies do not want to publish their data on-line because they are unable to prevent a competitor from using a program such as a Spider or Crawler to "scrape" the data from their database. The present invention provides a system which monitors all search requests and can distinguish between a human request and a machine. If the request is by a machine then the invention prevents attempts to mass copy and blocks further requests from that IP address. It then alerts the System Administrator. A person making repetitive attempts to copy and paste information can also be denied access. All of this takes place without legitimate human searchers being hampered.

The invention provides a method and system for enabling users of an on-line System to communicate in real time with other users of the System via Collaborative Instant Messaging. The most common ways of providing Customer Support are by telephone, e-mail or an on-line set of frequently asked questions (FAQ) and answers. Telephone support is expensive to administer and requires people fluent in the language. E-mail is far cheaper but usually does not provide an instant response. A well-executed FAQ will often solve problems encountered by more experienced computer users. Occasional users may find it harder to get the answer they want. The present invention contemplates a new method based on Instant Messaging (IM). IM is a piece of software that allows two computer users to type messages to each other when both are connected to the Internet. Several companies have created versions of IM including America On Line, Microsoft and Yahoo. IM is very popular as a way to chat to friends in other location while at work. When a new user of the System registers they will be provided with a piece of IM software and the names of a few other Visitors who have registered. The other Visitors are selected based on the length of time they have used the System, their language and time zone. Thus inexperienced users can get IM help from more experienced users of the system who speak the same language and are in the same time zone. In turn as more Visitors register they will be given the name of the current registrant who by then will be familiar with the System and able to offer help. We call this Collaborative Instant Messaging. It increases the chances that a Customer will get an instant response. It reduces the cost to the Owner of the System.

The invention provides a method and system for enabling Customer Services Center Representatives to communicate in real time with multiple users of an on-line System simultaneously using an Instant Messaging Interface that includes integrated access to a frequently asked questions

database and a database of conversation fragments so that responses may be entered with a click of a mouse. Where a Visitor is unable to locate another Visitor who can help with a problem they can request IM help from Customer Support. The present invention provides software for the Customer Support Representative (CSR) that combines IM with a database of FAQ and a database of conversation fragments such as "Hullo. What is your e-mail address?" Thus a single CSR can conduct multiple conversations in different windows on their screen. While the customer types at a normal speed the CSR is able to respond with single mouse clicks in many cases. Research has shown that the Oklahoma accent is the most appealing to an US audience. Since the conversation is "typed" rather than spoken the CSR can be located anywhere in the world.

The invention provides a method and system for rewarding users of the System who participate in maintaining and updating the data within the System. There are two ways in which a Visitor to the System can participate and be rewarded. The active method is for a Visitor to send an e-mail to a Record Manager alerting them to mistakes or encouraging them to provide more detail about themselves. The system records the Virtual Business Card ID's of a Visitor making such suggestions. If the Record Manager then upgrades to a premium subscription the Visitor receives a commission. The passive way is for the Visitor to check a box on the Search Bar that activates the Zoë system. This then permits their computer's spare CPU and RAM to be used as part of the Network described in Claim 1.

The invention provides a method and system for enabling a Searcher to enter a Search Request in a Search Box without the need to describe the nature of the information being searched for. Normally when you search a database which contains more than one type of information you must specify the nature of the information, for example that you are searching for a telephone number rather than a company name. Some systems provide multiple search boxes, each one customized for a specific purpose. Others provide a drop down list or radio buttons to select from. The present invention includes a smart search box that can detect the type of data being sought automatically.

The invention provides a method and system for enabling a Searcher to enter a keyword such as a Trade Mark (Media Locators) into the Search Box and be directed to a Third Party Web Site which is the registered owner of the keyword. It is extremely difficult for a person placing an advert in print media, on TV or radio to gauge its effectiveness. The present invention provides a system of keywords that can be included in any form of advertising. A person viewing or hearing the keyword can then type it into the Search Box and be taken to the relevant page of the relevant Web Site. The search request is routed via the System Server that updates a counter. By using slightly different keywords an advertiser can compare the effectiveness of one location over another by seeing the different response rates. While there are several products that do the same thing all require special scanning technology. These limit their effectiveness and increase their cost.

The invention provides a method and system for enabling users of an on-line System to search a Database directly from their PC's desktop through software entitled the Search Bar without the need to first load their Web Browser or recall the URL of the Web Site where the system resides. The normal way to search an on-line Database is to start a Web Browser compatible with the database system. The present invention offers an alternative, a utility that displays as an icon on the Computer's Desktop. By clicking the icon the Search Box displays and a Search may be executed. One advantage of this method for the Searcher is that they do not have to remember the URL of the Search Site as it is always conveniently to hand. Another advantage for the Searcher is that the Search Box can be written in Java so that it will work identically across all platforms. Another advantage for the System Administrator is that modifications to the functionality and display of the Search Box can be made from a Central Computer and then broadcast to all users of the Search Bar.

The invention provides a method and system for branding and re-branding the Search Bar so that the "skin" and hyperlinks embedded can be changed from a Central Computer. The present invention enables the "look and feel" of the Search Bar to be modified from a central location even after it has been copied to an individual's computer. Thus, while the functionality remains the same, the skin can be made to advertise a product or promote a company. The Central Computer can add and remove functionality and change the pointers to which hyperlinks point.

The invention provides a method and system for enabling third party Web Sites to embed the Search Bar into their web site so that a search of the Database may be initiated from any Web Site. By distributing the Search Bar over an unlimited number of Web Sites the chances of a searcher finding it and starting to use it increases. The more the Database is visited the more useful it becomes as the System allows Record Managers to control their records and provides an easy way for Searchers to recommend changes. Thus the more the Database is used the more accurate it becomes. The more accurate it becomes the more Searchers will want to use it thus creating a virtuous circle.

The invention provides a method and system for creating Virtual Business Cards that record information about an individual such as name and address details. While there are many databases that contain personal information these have usually been compiled by companies to keep track of customers and government agencies to keep track of citizens. In both cases the owner of the System holds control of the data. In some case it is impossible even to know that the data exists and perhaps impossible to correct mistakes. The invention provides a system of Virtual Business Cards where the individual manages his or her record. They are able to add, delete and modify information at will and hide details from public view either permanently or temporarily. The Virtual Business Card ID can be embedded in e-mails, printed on stationery and spoken over the telephone. While contact information is constantly changing the Virtual Business Card ID remains permanent providing a simple way to contact an individual months, even years, after initial contact.

The invention provides a method and system for enabling Virtual Business Card users to tag other Virtual Business Card ID's to create an on-line Address Book accessible from any Internet connected Device. Most people have address books, either manual or electronic. Each person has to create the data and edit it to keep it up to date. Often different devices will have their own address books, each of which is incompatible to the others. The present invention provides a method of tagging other Virtual Business Card ID's within the system to create an online Address Book. This has two significant benefits. The owner of the Address Book does not have to update any records other than his or her own. If they spot a mistake in a record they can send an alert to the Record Owner proposing a correction. The other benefit is that the Address Book can be viewed from any device connected to the Internet, whether Office PC, Internet café, WAP phones or other device. The present invention provides a method to synchronize addresses with other popular programs such as Palm Address Book and Microsoft Outlook.

The invention provides a method and system for enabling Record Managers to create and deploying a local language URL. The design of the Internet requires anyone search for a web address to enter a domain name in English. This means that anyone who speaks, for example, Chinese must enter an English domain to visit a Chinese site. This means they must learn English and use a keyboard capable of displaying English and Chinese characters. This is a significant brake on the growth of the Internet. The present invent provides a method whereby a pseudo domain name can be entered in the relevant language. The Database stores both the pseudo local language URL and the real English URL. When a search is made the two names are matched and the Searcher is taken directly to the relevant web site. Thus a Searcher never need know the English domain name.

The invention provides a method and system for enabling publishers of any material to obtain the most current address of a subscriber by accessing the list of Virtual Business Card ID's that subscribe to their publication stored in the System and obtaining the most current subscription address. The Virtual Business Card can store several addresses for an individual including one designated as a mailing address. The present invention provides a system whereby a Virtual Business Card user can provide their Virtual Business Card ID to a company that wishes to include them on their mailing list. When the company wishes to send the owner of the Virtual Business Card a piece of mail, such as a magazine subscription, they notify the Virtual Business Card by e-mail the date upon which the next mail will take place. The Virtual Business Card owner is thus reminded to correct their subscription address if it has changed. The company then queries the System Database for the most current subscription list and posts the items out. The advantage of this system is that it ensures a high degree of delivery to the most appropriate address. It therefore increases customer loyalty. Frequent travelers will be prompted to subscribe to magazines confident that they will follow them to the relevant address. The invention contemplates providing the owner of a Virtual Business Card with the ability to suspend a subscription e.g. while overseas.

Brief Description of the Drawings

Figure 1 is a topographical Diagram of the Internet showing roughly how IP addresses are permanently allocated, temporarily allocated or free.

Figure 2 is a diagram demonstrating the random nature of IP allocation. Hence the need for a network of PC's to discover which IP addresses are allocated to Web Sites.

Figure 3 is an overview of how a network of Computers can achieve the task under the control of a Central Computer.

Figure 3a shows how the program appears to a Node PC – a screenshot of the program running.

Figure 3b shows the steps taken to reward a node PC for allowing the System to use spare CPU and RAM to discover new IP addresses or update existing records.

Figure 4 shows the logic for finding a new Web Address and adding it to the Database.

Figure 5 shows the logic for gathering further information about a Web Site from the Site itself.

Figure 6 shows the logic for gathering further information from a Whois database.

Figure 6a shows the process by which a search request for a Web Address creates the record.

Figure 7 shows the logic to test if a query is a legitimate human request or program attempting to copy data without permission.

Figure 8 shows a diagram summarizing the steps that are taken to enable Customers of the System to obtain on-line help through Collaborative Instant Messaging.

Figure 9 shows a diagram summarizing the steps that are taken to enable Customers to obtain instant on-line help from a Customer Service Center.

Figure 10a shows a diagram demonstrating the benefits of a Database in which Record Managers can maintain their data and Searchers can propose changes.

Figure 10b shows a diagram demonstrating one way in which a Customer can interact with a Record Manager of a Web Site leading to the Customer being rewarded.

Figure 11 shows the logic that enables a single Search Box to handle multiple types of data without the need for the Searcher to specify the type of data being searched for.

Figure 12 shows the steps that connect a Media Locator in an advert to a Web Site via the Central Computer.

Figure 13 shows a diagram demonstrating how the database may be accessed via a compatible Web Browser, the Search Bar or a WAP enabled device.

Figure 13a shows a diagram demonstrating the launch of the Search Bar on a Node PC.

Figure 13b shows a diagram demonstrating the Search Bar loaded and a search query executed.

Figure 13c shows a diagram showing the Search Bar before and after third party branding.

Figure 13d shows the steps taken for a Record Manager to acquire a Search Bar skin.

Figure 13e shows the steps taken by the System Administrator to change the skin upon termination of a third party's agreement to brand the Search Bar.

Figure 13f shows the steps taken by a Search Bar user to download the Search Bar and use it.

Figure 13g shows a diagram that demonstrates how a Third Party can embed the Search Bar on their Web Site.

Figure 14a shows the steps taken to obtain a Virtual Business Card ID and manage the record.

Figure 14b shows the steps taken to associate a Virtual Business Card ID with one or more web sites.

Figure 14c shows the logic demonstrating how a central address book may be accessed from any Internet device.

Figure 14d shows the steps by which an Address Book is created and records added.

Figure 14e shows Menu options available to a Record Manager relating to an Address Book.

Figure 15 shows the steps demonstrating the value of a local language URL.

Figure 16 shows a diagram demonstrating a WAP device connecting to the system to obtain information and then immediately interact with the record found via e-mail, telephone or Web access.

Figure 17 shows a diagram demonstrating how a Virtual Business Card ID is used to improve a subscription system.

PREFERRED EMBODIMENT OF THE INVENTION

The present invention provides a method and system for creating, editing, expanding, supporting, protecting, searching, displaying and distributing a database that appears to contain information about every Web Address, individuals associated with a Web Site and keywords such as registered trade marks.

The invention provides a method and system for creating and maintaining a database by networking an unlimited number of computers connected to the Internet to discover new domain names and update details of existing domain names. There are over 4.2b IP addresses each of which might be used by a Web Site. There is no public resource where one can go and check. The present invention creates such a resource by testing each IP address to see (a) if it is in use and (b) if the user is a Web Site. This is done by a network of computers under the direction of a Central Computer. The results of the testing are then sent to the Central Computer that creates or updates the relevant record.

The present invention combines an unlimited number of PC's (nodes) connected to the Internet into a spoke-and-hub network using the unused processing power of PC's. For identification purposes we call this the Zoë System. The Zoë System distributes the processing load from the Central Computer to each node. Each participating PC user downloads a small piece of software to their hard disk. This software detects when there is unused CPU cycle and RAM. The software is memory resident so that once loaded it sits quietly in the background. When it detects that the PC is connected to the Internet and has spare processing capacity it launches. It sends a signal to the Central Computer to tell it that it is available and requests an IP address to check and a list of tasks to perform related to that IP address. The Central Computer sends the relevant information. The node PC then searches the Internet for the relevant information. Once it finds the relevant information it sends the results back to the Central Computer and requests a new IP address to check. This process repeats until the PC user either disconnects from the Internet or requires processing power for another task. The Central Computer records the identity of the node that found an IP address or updated information about an IP address already in the System. This then enables the System to reward the owners of the node PC's for finding or updating information about a specific IP address.

Referring to the drawings, Fig 1 shows that there are over 4.2 billion IP addresses. Every device connected to the Internet is allocated an IP address. Each address is capable of being allocated to a Web Site Surfer 101, a Domain Name 102 or is unallocated 103. Web Sites require a permanent or "static" IP address in order that visitors can always find them. Web Site surfers are usually allocated a temporary or "dynamic" IP address for the duration of their session. About 100 million have been allocated to Web Sites. At any one time perhaps Web Site surfers are using 900 million. The remaining 3.2 billion are unused. The problem with this diagram is that it gives the impression that all web addresses are neatly organized into a single range of IP addresses. Fig 2 gives a more accurate impression.

Fig 2 demonstrates the random nature of the location of IP addresses allocated to Web Sites. The only really accurate way to find out the IP address of every Web Site 104 is to test every IP address to ensure that it is not being used by a Surfer 105. As there are over 4.2b this task is impossible for a single PC.

Fig 3 shows that by networking many PC's the task becomes manageable within a reasonable cost. The Central Computer 106 sends an IP address to any Node PC that is connected to the Internet 107. The Node PC then searches the Internet for information about the ownership of the IP address to see if it belongs to a specific Web Site. In the example a search for IP address 159.22.13.21 could result in a web address being found, no web address being found, or in use by a device other than Web Address.108 It returns the results to the Central Computer for inclusion in the database. By distributing the search over many PC's the time and costs is significantly reduced.

Fig 3a shows a screenshot of the System Search Bar loaded 109. In the background there is another application running. (in the example Windows Explorer)110. In the example the System notifies the Node PC that they have found 6,285 Web Sites 111. The User may minimize the Window when they are not looking for data in the System database. While minimized the System will continue to find new Web Sites. A Node PC with a permanent connection to the Internet may find between 5,000 and 10,000 new Web Sites per day without interfering with other uses such as word processing or slowing down the PC's performance.

The invention provides a method and system for rewarding users of the System who participate in maintaining and updating the data within the System. The passive way is for the Visitor to check a box on the Search Bar that activates the Zoë system. This then permits their computer's spare CPU and RAM to be used as part of the Network described in Claim 1.

Fig 3b demonstrates how to encourage Visitors to permit their computers to act as Node PC's. Node PC sends signal to Central Computer with Owners Virtual Business Card ID. 112. Central Computer records the ID and sends an IP address for testing to the Node PC 113. The Node PC tests to see if the IP address is used as a Web Address 114. (This process is detailed in Fig 4). If it is not the Node PC sends the result back to the Central Computer that updates the database 115. If it is used as a Web Address the Node PC records the fact 116 and sends the result back to the Central Computer for inclusion in the database 117.

The System offers Web Sites a free and premium entry in the database. At a later date the Central Computer receives a request from the Ip address found by the Node PC to upgrade their record from free to premium. 118 The Central Computer sends a signal to the Node PC that found the IP address 119. The signal informs the owner of the PC that they just earned a commission for finding the IP address. Thus Node PC owners are rewarded for permitting their PC's spare CPU and RAM to be used.

Fig 4 describes the steps that are taken by the System to test an IP address. This routine inserts new records in the database. It is triggered either in response to a search request or as part of the process of finding new IP addresses described above. To search the 4.2billion IP addresses requires the following steps: An IP Address is selected for testing 120.. The Central Computer

Database is searched to see if the IP address is already recorded 123. If the test at Step 123 shows that a record already exists in the Central Computer Database the System immediately runs Sub-Routine 1 124 and stores the result in the record held by the Central Computer Database about that IP address. If it is not, the System tests to see if the IP address is in use 121. If the IP address is not in use a record is created in the Central Computer Database with that fact and the program terminates 122. If the IP is in use the System tests if the use is by a web address125. If the IP is not in use by a web address a record is created in the Central Computer Database with that fact and the program terminates 128. Having established that the IP address is in use by a Web Address the system then queries the relevant whois database 126. If identity information is available the System runs Sub-Routine 2 described in Fig 6. Upon completion of Sub Routine 2, or if Sub Routine 2 cannot be run the System tests if the Web Site itself is accessible 129. If the Web Site is not accessible the System creates/updates the record for that IP address with that fact and the program terminates 131. Having accessed the Web Site the System then runs Sub-Routine 1 described in Fig 5 to try and obtain further information about the Web Site. The data obtained from Sub-Routine 1 and Sub Routine 2 is then recorded in the record about that IP address in the Central Computer Database and the program terminates 132.

Fig 5 describes Sub Routine 1 - the steps that are taken to re-test an IP address already recorded in the database. Sub Routine 1 is triggered by Step 124 in Fig 4 132 that has found that the IP address is already recorded in the Central Computer Database 133. In Test 1 the System queries the Web Site to see if it is WAP enabled 134. The result of this Test is recorded in the record about the IP address in the Central Computer Database 135 and 136. In Test 2 the System queries the Web Site to see if the language used is English 137. The result of this Test is recorded in the record about the IP address in the Central Computer Database 138 and 139. Sub-Routine 1 can be expanded indefinitely with new tests 139. The result of additional Tests is recorded in the record about the IP address in the Central Computer Database 140 and 141. The purpose of re-testing is to discover if the information known has changed. An additional purpose is to extract more information as new processes are developed. Upon completion of the final test Sub Routine 1 exits 142.

Fig 6 describes Sub Routine 2 - the steps that are taken to extract data from a whois Database. Sub Routine 2 is triggered by Step 127 in Fig 4 143 that whois data is available 146. A whois Database is a directory of IP addresses providing ownership and contact information. Each country has their own directory with the exception of some smaller territories. The structure of each whois database varies. ICANN rules require that all key information about the identity and address of a Web Site owner are publicly available. However not all territories comply. Thus the system uses a rules database to determine the correct way to extract data and the actual information available from a specific whois Database. First the Sub-Routine detects the correct whois Database and loads a rules Database that describes how the data is stored by that whois Database. Then the Sub-Routine seeks to obtain access to the whois Database. Then the Sub-Routine runs a series of tests to seek various

components of identity information such as ownership, the contact information of the Site Administrator and any other information that the Owner of the System deems useful. Once complete the Sub-Routine terminates.

The System first matches the IP address to the relevant whois database 144 and then loads the rules from the Rules Database so that it knows how to extract data. If for some reason the data is not accessible at that time the program terminates 147. Otherwise the System seeks to extract details of ownership 148 and records the results 149,150 in the record for this IP address in the Central Computer Database. The System then seeks to extract details of the administrator 151 and records the results 152,153 in the record for this IP address in the Central Computer Database. The System then seeks to extract further details 154 and records the results 155,156 in the record for this IP address in the Central Computer Database. Steps 154, 155 and 156 can be repeated until all relevant information is obtained. Sub-Routine 2 then terminates 157.

The invention provides a method and system for expanding the database in real time in response to a search request so that it appears to contain information about every Web Address, individuals associated with a Web Site and keywords such as registered trademarks. When a search is made for a Web Address that is not in the database a routine runs which finds the key identity information, creates a new record and then displays it. This process typically takes a few seconds. Thus the database appears to contain every web address creating new records in response to search requests.

Fig 6a summarizes the steps that are taken when a Searcher queries the Central Computer Database for details of a Web Address. If the web address is not in the Central Computer Database the record is created in real time. The process takes a few seconds so the Searcher is unaware that the Record is being created in response to the request. A Searcher enters a request for a web site 158. The query is sent to the Central Database 159. If the Web Address is not in the Central Computer Database the Routine described in Fig 4 and Sub Routine 1 (described in Fig 5) and Sub Routine 2 (described in Fig 6) are run 161.

The invention provides a method and system for protecting an on-line Database from being copied by computer programs such as Spiders or Crawlers as well as individuals seeking to copy multiple records, while transparently permitting human requests to pass through. Many companies do not want to publish their data on-line because they are unable to prevent a competitor from using a program such as a Spider or Crawler to "scrape" the data from their database. The present invention provides a system which monitors all search requests and can distinguish between a human request and a machine. If the request is by a machine then the invention prevents attempts to mass copy and blocks further requests from that IP address. It then alerts the System Administrator. A person

making repetitive attempts to copy and paste information can also be denied access. All of this takes place without legitimate human searchers being hampered.

Fig 7 describes a method of protecting data in a database. "Data scraping" is the process by which data is copied from a database without permission. This Diagram summarizes the steps that are taken to prevent attempts to copy data from a database while permitting legitimate human requests to flow transparently. A Request is received to search the Central Computer Database 165. The System tests if the IP address of the Searcher is stored in a Black Lost Database 177 on the Central Computer 166. If the IP address is stored in the Black List Database the Search is not permitted to continue 167. If the IP address is not stored in the Black List Database the System tests if the IP address of the Searcher is stored in a Visitor Database 176 on the Central Computer. If the IP address of the Searcher is not stored a new record is created for the Searcher in the Visitors Database and the date and time that a search starts and ends is recorded 170. If the IP address of the Searcher is stored in the Visitors Database the date and time that the new search starts and ends is recorded in the Visitors Database169. The current session is then compared with the previous session 171. If the times taken to search the Central Computer Database are not within one standard deviation the Search is allowed to continue 172. Otherwise the System assumes that a machine is conducting the search and the IP address is recorded in the Black List Database 173. The System Administrator can configure the System to select appropriate anti-scraping strategy 174. An alert is sent to the System Administrator about the IP address 175.

The invention provides a method and system for enabling users of an on-line System to communicate in real time with other users of the System via Collaborative Instant Messaging. The most common ways of providing Customer Support are by telephone, e-mail or an on-line set of frequently asked questions (FAQ) and answers. Telephone support is expensive to administer and requires people to speak the language fluently and with an acceptable accent. E-mail is far cheaper but usually does not provide an instant response. A well-executed FAQ will often solve problems encountered by more experienced computer users. Occasional users may find it harder to get the answer they want. The present invention contemplates a new method based on Instant Messaging (IM). IM is a piece of software that allows two computer users to type messages to each other when both are connected to the Internet. Several companies have created versions of IM including America On Line, Microsoft and Yahoo. IM is very popular as a way to chat to friends in other locations. Some Companies are using IM to communicate with Customers. When a new user of the System registers they will be provided with a piece of IM software and the names of several previous Visitors who have registered. The other Visitors are selected based on the length of time they have used the System, their language and time zone. Thus inexperienced users can get IM help from more experienced users of the system who speak the same language and are in the same time zone. In turn as more Visitors register they will be given the name of the current registrant who by then will be

familiar with the System and able to offer help. We call this Collaborative Instant Messaging. It increases the chances that a Customer will get an instant response. It reduces the cost to the Owner of the System.

Fig 8 summarizes the steps that are taken to enable Customers of the System to obtain Instant on-line help through collaborative Instant Messaging. In the example the Customer who registers now Customer D 178, is connected via an Instant Message Server 179 to three previous Customers, (Customers A-C) who speak the same language and are in the same time zone 180. If Customer D needs help he can write an instant message to Customers A –C 181 and obtain a response 182. In return as new Customers E-F join the system 183 they will be connected to Customer D. The number of Customers that connect to each other may be varied. The Time lag between each Customer can also be varied. The system provides a method of Customer Support in which each Customer is able to obtain help from more experienced users in real time and at no cost. If no other Customer is able to answer the question then a request can be made to Customer Support (see Fig 9). While the use of Instant Messaging is not new, a system of collaborative Customer Support is novel.

The invention provides a method and system for enabling Customer Services Center Representatives to communicate in real time with multiple users of an on-line System simultaneously using an Instant Messaging Interface that includes integrated access to a frequently asked questions database and a database of conversation fragments so that responses may be entered with a click of a mouse. Fig 9 shows that where a Visitor 184 is unable to locate another Visitor who can help with a problem they can request IM help via an IM server 185 that connects them to a Customer Support Representative (CSR) 186. The present invention provides software for the CSR that combines IM 187 with a database of FAQ 188 and a database of conversation fragments such as "Hullo. What is your e-mail address?"189. Thus a single CSR can conduct multiple conversations in different windows on their screen. While the customer types at a normal speed the CSR is able to respond with single mouse clicks in many cases.

The invention provides a method and system for rewarding users of the System who participate in maintaining and updating the data within the System. There are two ways in which a Visitor to the System can participate and be rewarded. The passive method has been previously described. The active method is for a Visitor to send e-mail to a Record Manager alerting them to mistakes or encouraging them to provide more detail about them. The System records the Virtual Business Card ID's of a Visitor making such suggestions. If the Record Manager then upgrades to a premium subscription the Visitor receives a commission.

Traditionally companies create databases of information about customers and suppliers. Governments also record details about citizens. In either case the person whose details are recorded may be unaware of the information. In either case the person may have difficulty in correcting the

information. In either case because the information is not publicly available third parties are unable to either view the information or propose changes. The present invention gives control of the record be with the person about whom the record is created. Visitors to the system can propose changes to the data.

Fig 10a demonstrates the power of the new System. In the Traditional relationship only the Database Owner 191 can see and modify the Database 190. The Customer 192 often has no direct access. Contacts of the Customer 193 usually have no access. This restricts the flow of information and leads to poor quality data as the examples indicate. In the System proposed the relationship is between the Database Owner 195, the Record Manager 196 and the Contact of the Customer who is a Visitor 197. Each can view the Database 194 and plays a part in maintaining the data current. With more people being able to view and modify the information the data is far easier to keep current.

Fig 10b demonstrates the interactive nature of the Database. In Step 1 Customer A 198 informs Web Site B 200 via the E-Mail Server 199 of a mistake in their record in the database by sending e-mail 201. Web Site B responds 202. In Step 2 Web Site B 204 connects the Database Server 203 and purchases a Premium Entry. In Step 3 the E-Mail Server 206 notifies Customer A 205 by e-mail that they have received a credit 207.

The invention provides a method and system for enabling a Searcher to enter a Search Request in a Search Box without the need to describe the nature of the information being searched for. An embodiment of the present invention provides a method and system that enables Visitors to find a Web Address when only knowing a fragment of identity such as the name, the telephone number or e-mail address of either the owner, the Web Site administrator or the technical contact of the particular Web Site. Furthermore the search box is "smart" and is able to detect the type of information being searched for. It is not necessary to tell the search box that the information being searched for is, for example, an e-mail address or a telephone number. Where a telephone number is used to search the database the number is read from right to left thus ensuring that even if the Searcher omits an area or country code the relevant record will display in the results. Normally when you search a database which contains more than one type of information you must specify the nature of the information, for example that you are searching for a telephone number rather than a company name. Some systems provide multiple search boxes, each one customized for a specific purpose. Others provide a drop down list or radio buttons to select from. The present invention includes a smart search box that can detect the type of data being sought automatically.

Fig 11 summarizes the steps that are taken to enable a single Search Box to handle multiple types of data without the need for the Searcher to specify the type of data being searched for. In this example a Search Box is able to distinguish if the search request is a Web Address, an E-mail address, a Telephone Number, a Virtual Business Card ID, keyword used to connect an advert in traditional

media (Media Locator) or text such as a person's name. This "smart" Search Box is more intuitive than a traditional Search Box that would require the Searcher to specify the type of Data being sought. By enclosing a Search Request in double quotation marks the Searcher is able to manually override the Search Logic. For example if a company name started with WWW surrounding the request with double quotation marks forces the search for a name rather than a web address.

A Search is entered into a Search Box 208 and a series of tests are then performed. The order demonstrated is illustrative. The System tests if the search string contains an @ symbol 209. If it does it treats the query as an e-mail address 210. Otherwise the System tests if the search string contains .com or other permissible web address extensions 211. If it does it treats the query as a domain name 212. The System tests if the search string contains http: or other permissible text that starts a web address 213. If it does it treats the query as an domain name 212. If either of the above tests succeeds the System then attempts to display the relevant record for the domain name 214. If no domain name is found in the system the System runs the routine described in Fig 217. If the record is found it is displayed 216. The System tests if the search string is surrounded by double quotation marks 215. If it does it treats the string literally and searches in the name field of the database. Otherwise the System tests if the search string ends with an exclamation mark 218. If it does it treats the search request as a Media Locator 224. Otherwise the System tests if the search string is 7 numbers or more (ignoring separators such as "-". If it does then it treats it as a possible telephone number 221. The System tests if the search string starts with "2000" 220. If it does it treats the search request as a Virtual Business Card ID 219. Otherwise it reverses the numbers and treats it as a telephone number 222. All other requests are treated as names of individuals or companies 223.

The invention provides a method and system for enabling a Searcher to enter a keyword such as a Trade Mark (Media Locators) into the Search Box and be directed to a Third Party Web Site which is the registered owner of the keyword. It is extremely difficult for a person placing an advert in print media, on TV or radio to gauge its effectiveness. The present invention provides a system of keywords that can be included in any form of advertising. A person viewing or hearing the keyword can then type it into the Search Box and be taken to the relevant page of the relevant Web Site. The search request is routed via the System Server that updates a counter. By using slightly different keywords an advertiser can compare the effectiveness of one advertising location over another by seeing the different response rates. While there are several products that do the same thing all require special scanning technology. These limit their effectiveness and increase their cost.

Fig 12 demonstrates how a Media Locator is used to connect an advert to a Web Site. In Step 1, the Media Locator is placed in an advert in a newspaper 226. (The Media Locator could equally be included in an advert on radio or television or on any form of packaging. A Media Locator is simply a keyword and therefore requires no special technology to implement.) In Step 2 the Visitor types in the Media Locator in the Search Bar using any Internet Device connected to the System 227. In Step

3 the Central Computer directs Visitor to relevant Web Site 228 and updates a record counter 229. (The Record Manager can check the number of Visitors by logging-in and reviewing the statistics.). In Step 4 the relevant page of the relevant Web Site displays 230. Thus the owner of the Media Locator can verify the effectiveness of each advert by the number of visitors who connect through the system. The Company could use the System to direct Visitors to different pages each of which is customized to the target audience.

The invention provides a method and system for enabling users of an on-line System to search a Database directly from their PC's desktop through software entitled the Search Bar without the need to first load their Web Browser or recall the URL of the Web Site where the system resides. The normal way to search an on-line Database is to start a Web Browser compatible with the database system. Recently it has now become possible to display a Web Page that has been written using Wireless Mark Up Language (WML). The present invention offers an alternative, a utility that displays as an icon on the Computer's Desktop. By clicking the icon the Search Box displays and a Search may be executed. One advantage of this method for the Searcher is that they do not have to remember the URL of the Search Site as it is always conveniently to hand. Another advantage for the Searcher is that the Search Box can be written in Java so that it will work identically across all platforms. Another advantage for the System Administrator is that modifications to the functionality and display of the Search Box can be made from a Central Computer and then broadcast to all users of the Search Bar.

Fig 13 demonstrates that the Database stored on the Central Computer 234 may be viewed in three ways: (1) By using a PC with a compatible Web Browser 231 - such as Internet Explorer V4 or higher, (2) via the Search Bar 232 or (3) via any kind of WAP enabled device 233.

Fig 13a shows the Search Bar as an icon 237 on the Start Menu. If clicked this launches the program. The Search Bar is a Java Application so will run on any Java compatible operating system including all current versions of Windows (98, NT and 2000), Linux, Unix and Mac. The Search Bar connects a Node PC 235 on the Database stored on the Central Computer to enable a Searcher to query the Database 236. It is not necessary to have a Web Browser loaded before commencing the Search Request.

Fig 13b demonstrates the process by which a User can access the Database via the Search Bar 241, a Java Application that will run on any modern operating system in conjunction with any Web browser. In Step 1 the Searcher types in a Search Request 238. The Search Request is sent to the Central Computer 239. In Step 2 the Central Computer sends the results of the Search. The results are then displayed in a Browser Window on the Searcher's computer 240.

The invention provides a method and system for branding and re-branding the Search Bar. The present invention enables the "look and feel" of the Search Bar to be modified from a central

location even after it has been copied to an individual's computer. Thus, while the functionality remains the same, the skin can be made to advertise a product or promote a company. The Central Computer can add and remove functionality and change the pointers to which hyperlinks point.

Fig 13c demonstrates the effect of re-branding the Search Bar. The "before" screenshot demonstrates generic branding 242. The "after" screenshot demonstrates a third party corporate branding 243. The information related to the skin e.g. Company Logo and Home Page are stored in a database on the System Server. Upon termination of an agreement between the owner of the System and the Company the owner of the System can switch off the Company skin and replace it with their own skin. When a Search Bar user starts the program the replacement skin displays. Alternatively the Owner of the system can "rent" skins to Third Parties for an agreed period of time. Each time there is a change in the Company renting the skin the Search Bar will change. This provides a means by which a Third Party Company can place its logo and link to Home Page on an unlimited number of Computer Desktops. It bypasses the users Home Page or Favorites in their Web Browser because it is controlled from the Central Computer.

Fig 13d summarizes the steps that are taken by a Record Manager to create a Search Bar skin. A Record Manager logs in 244 and requests a skin 245. A License Agreement displays 246. If they do not accept the terms of the License Agreement the program terminates 247. After accepting the terms of the License the Record Manager enters the URL of the Web Site that they wish the Search Bar to link to 248. The System tests that the URL supplied is valid 249. If it is not valid the System requests a valid URL 250. If it is valid then it stores the URL temporarily 251. The Record Manager enters the URL of a Logo that he wants to use to paint the skin with 252. The System tests that the URL supplied is valid 253. If it is not valid an Error Message displays 254 and the user is returned to Step 252. The System then tests that the Logo is in a valid file format 255. If it isn't then an error message displays 256 and the user is returned to Step 252. Otherwise the System copies the Logo from the Web Site 257 and tests that the Logo is the correct file size 258. If the Logo is not the correct size an Error Message displays 256 and the user is returned to Step 252. Otherwise the URL recorded at Step 251 and logo copied at Step 257 are now stored in the skins database 259. The custom Search Bar is then prepared and e-mailed to the Record Manager 260.

Fig 13e summarizes the steps that are taken by a Record Manager or a System Administrator to change a Search Bar skin. Once a License Agreement expires all existing Search Bars which have the old skin will change automatically when they start up again. Thus this procedure is either used by a Record Manager making modifications or a System Administrator re-taking control of the Search Bar after a License Agreement expires. A Record Manager (or System Administrator logs) in 262. The Systems asks if they wish to change the URL 263. If they don't they go to Step 268. The Record Manager enters the new URL of the Web Site that they wish the Search Bar to link to 264. The System tests that the URL supplied is valid 265. If it is not valid the System requests a valid URL

2267. If it is valid then it stores the URL temporarily 266. The Systems asks if they wish to change the logo 268? If they don't the System takes them to Step 276. The Record Manager enters the URL of a Logo that he wants to use to paint the skin with 269. The System tests that the URL supplied is valid 270. If it is not valid an Error Message displays 271 and the user is returned to Step 269. The System then tests that the Logo is in a valid file format 272. If it isn't then an error message displays 273 and the user is returned to Step 269. Otherwise the System copies the Logo from the Web Site 274 and tests that the Logo is the correct file size 275. If the Logo is not the correct size an Error Message displays 273 and the user is returned to Step 269. Otherwise the URL recorded at Step 266 and logo copied at Step 274 are now stored in the skins database 276. The custom Search Bar is then prepared and e-mailed to the Record Manager 277.

Fig 13f summarizes the steps that are taken by a Searcher to download a copy of the Search Bar to their Computer. Once installed the Search Bar will only run if the Computer is connected to the Internet. The Searcher has the option to run the "Find New Web Sites" Routine (see Fig 3). The Search Bar checks to see if the skin has changed and updates itself if it has. The Search Bar then runs. The Visitor downloads the Search Bar to their PC 278. The Visitor then runs an installation program 279. If the installation runs correctly 280 the Visitor then starts the Search Bar 282. Otherwise an error message displays 281 and the Visitor is returned to Step 279. An option on the Search Bar enables the Searcher to activate the "Find New Web Sites" described in Fig 3. The System test if this feature is active 285 or inactive 284. The Search Bar detects if the Computer is connected to the Internet 286. If not an error message displays 287 until an Internet connection is made. Then the system detects if the Logo for the Search Bar has been changed 2888. If it has a copy of the new logo is downloaded to a configuration directory on the user's PC 289. Otherwise the System detect if the URL of the Search Bar skin has changed 290. If it has the new URL is stored in a configuration file on the Visitor's PC 291. Setting changes detected are then used to update the Search Bar 292. The Search Bar displays 293.

The invention provides a method and system for enabling third party Web Sites to embed the Search Bar into their web site so that a search of the Database may be initiated from any Web Site. By distributing the Search Bar over an unlimited number of Web Sites the chances of a searcher finding it and starting to use it increases. The more the Database is visited the more useful it becomes as the System allows Record Managers to control their records and provides an easy way for Searchers to recommend changes. Thus the more the Database is used the more accurate it becomes. The more accurate it becomes the more Searchers will want to use it thus creating a virtuous circle.

Fig 13g shows the effect of embedding the Search Bar in a Third Party web site. The "before" screenshot displays a typical web page 294. The "after" screenshot shows the same page with the Search Bar embedded 295. All the functionality remains in the Central Computer. The Third Party Web site only needs add a single line of HTML code to display the Search Box. For example:<script

src="http://centralcomputer.com/searchbar.js"></script>. There is no load on the Third Party Web Site.

The invention provides a method and system for creating Virtual Business Cards that record information about an individual such as name and address details. While there are many databases that contain personal information these have usually been compiled by companies to keep track of customers and government agencies to keep track of citizens. In both cases the owner of the system holds control of the data. In some case it is impossible even to know that the data exists and perhaps impossible to correct mistakes. The invention provides a system of Virtual Business Cards where the individual manages his or her record. They are able to add, delete and modify information at will and hide details from public view either permanently or temporarily. Each Virtual Business card is provided with a unique 10-digit ID. The Virtual Business Card ID can be embedded in e-mails, printed on stationery and spoken over the telephone. While contact information is constantly changing the Virtual Business Card ID remains permanent providing a simple way to contact an individual months, even years, after initial contact. For example if the Executor of a Will records their Virtual Business Card ID on a Will it provides a quick way for the family to contact the Executor even if the Will was executed many years ago and the family had lost contact with the Executor.

Fig 14a summarizes the steps that are taken to register a new Virtual Business Card ID. Once a Virtual Business Card ID is registered it is instantly available. Other visitors to the System may search the Central Computer Database by the Virtual Business Card ID number, e-mail address, person's name or any telephone number they have entered. In Step 1, a Visitor to the system provides their e-mail address, first and last name 294. The system then tests to see if the e-mail address is already registered 295. If it isn't e-mail is sent to the Visitor with a unique Virtual Business Card ID and a password 296. If the System sees that the e-mail address has already been allocated a Virtual Business Card ID, the routine terminates with an error message that displays the Virtual Business Card ID allocated to that e-mail address 297. If a Visitor has more than one E-Mail address they may have more than one Virtual Business Card ID. In Step 2 the Visitor goes to the login page and enters the Virtual Business Card ID and password they received by e-mail 298. The System tests that the information is correct 299. If they make a mistake they must re-enter the information correctly 300. Once they enter the correct Virtual Business Card ID and password they can enter address and contact details 301. They can decide which parts of the information they wish to hide and which to display. There is no limit to the number of times they can change this information. Each time they make a change the new information is immediately available.

Fig 14b summarizes the steps that are taken to associate a Virtual Business Card ID with a Web Address. Once the association is made anyone searching the System will see the relationship. Thus a search for an individual's name will also display the Web Addresses they manage. Conversely a search for a Web Address will display the names of individuals associated with that Web Address.

This increases the chances of finding the record of a specific Web Site or Individual within the System. In Step 3 a Visitor to the System enters a Web Address that they wish to become the Record Manager for 302. The System tests to see if the Web Address is already in the Central Computer Database 303. If the Web Address isn't, the System runs the procedure outlined in Fig 4 to create it "just in time". If the System is unable to succeed in adding the Web Address the routine terminates with an error message 304. Otherwise the System tests to see if anyone else is listed as being the Record Manager 305. If more than one person claims ownership then a Dispute Procedure is run 306. Otherwise the record for the Web Address is associated with the Visitor's Virtual Business Card ID who becomes the recognized Record Manager 307. Once the association is made the Record Manager can take control of the record and add, modify, hide and delete contact and other information 308. In one embodiment of the System a Record Manager may be given different levels of access. The basic level may be free. To add further content and obtain further services the Record Manager would pay a subscription.

The invention provides a method and system for enabling Virtual Business Card users to tag other Virtual Business Card ID's to create an on-line Address Book accessible from any Internet connected Device. Most people have address books, either manual or electronic. Each person has to create the data and edit it to keep it up to date. Often different devices will have their own address books, each of which is incompatible to the others. The present invention provides a method of tagging other Virtual Business Card ID's within the system to create an online Address Book. This has two significant benefits. The owner of the Address Book does not have to update any records other than his or her own. If they spot a mistake in a record they can send an alert to the Record Owner proposing a correction. The other benefit is that the Address Book can be viewed from any device connected to the Internet, whether Office PC, Internet café, WAP phones or other device. The present invention provides a method to synchronize addresses with other popular programs such as Palm Address Book and Microsoft Outlook. Fig 14c demonstrates by storing the Address Book on a Central Computer Database 315 it is accessible from any Internet Device such as an Office or Home PC 309, an Internet Café 310, a laptop 311, a WAP phone 312, a Palm Pilot with Internet access 313 or a Windows CE device with Internet access 314. The System includes software that synchronizes the records in the Address Book with popular software such as Microsoft Outlook and Palm Pilot Address Book. It cannot be lost or stolen as a traditional address book can.

Fig 14d summarizes the steps that are taken to create a new Address Book and add records. Unlike a normal Address Book the Record Managers manage each record rather than the Address Book owner. Each time a record is updated the Address Book is instantly corrected. In Step 4 the Visitor requests permission to create a new Address Book 316. The Visitor may create multiple Address Books but each one must have a unique name. The System tests if the name is unique 318. If the name suggested has already been created the routine terminates with an error message. 319

Otherwise a new Address Book is created 317. In Step 5 the Visitor goes to a screen designed to enable them to add a new record to their address book 320. The Visitor enters search information such as a person's name. Once they find the relevant record they mark it with a check box. The system then tests to see if the record has already been added 322. If it has, the routine terminates with an error message 321. Otherwise the record is added to the Address Book 323.

Fig 15 summarizes the options available to a Visitor once they have opened an Address Book. All the data contained in an Address Book is "read only" as it is supplied by the relevant Record Managers for each Virtual Business Card ID or Web Address. This means that an Address Book is extremely economical in storage space as it is just a collection of hypertext links each of which is a 10-digit ID number. The only time it expands is if the Visitor decides to download the Address Book to an off-line device. In Step 6 a Visitor to the System logs in with their Virtual Business Card ID and password 324. The System tests that the Virtual Business Card ID and password are correct 325. If they are the Address Book(s) are displayed 326. Otherwise an error message displays 327. The Visitor selects an Address Book and the Main Menu. In Step 7 once an Address Book is open the Main Menu displays 328. The Visitors is able to display a specific record 335. The Visitor can also add new records 336. The Visitor may also print record(s) 337. The Visitor may also delete record(s) 338. The Visitor may choose to add additional password protection to the Address Book 331 or individual record(s) 339. The Visitor may also copy 333 and paste 341 record(s) from one Address Book to another. The Visitor may also download the Address Book to a device such as a Computer so that it may be viewed while off-line 334. The Visitor may also synchronize the Address Book with other popular Address Book programs such as Microsoft Outlook or Palm Address Book 342. The Visitor may not edit a record as a Record Manager does this task. However if the Visitor discovers a mistake in a record the System enables him to e-mail the relevant Record Manager with a proposed edit 340. In turn the Visitor may accept edit changes proposed by other Visitors 332. Finally the Visitor may rename 329 or delete 330 an Address Book.

The invention provides a method and system for enabling Record Managers to create and deploying a local language URL. The design of the Internet requires anyone who searches for a web address to enter a domain name in English. This means that anyone who speaks, for example, Hebrew must enter an English domain to visit a Hebrew language web site. This means they must learn English and use a keyboard capable of displaying English and Hebrew characters. This is a significant brake on the growth of the Internet. The present invent provides a method whereby a pseudo domain name can be entered in the relevant language. The Database stores both the pseudo local language URL and the real English URL. When a search is made the two names are matched and the Searcher is taken directly to the relevant web site. Thus a Searcher never need know the English domain name.

Fig 15 demonstrates how a Local Language URL is used to connect a visitor to a Web Site without the need to type the URL in English. In Step 1 in the example the Hebrew Web Address is

mentioned in an article in a Hebrew newspaper 343. The reader cannot speak English. In Step 2 the Visitor types in the Hebrew Web Address using any Internet Device connected to the System 344. In Step 3 the Central Computer Database matches the Hebrew Web Address to the real English URL 345. A counter updates so that the Record Manager knows how many people have used the Service 346. In Step 4 the relevant Web Site displays on the Searcher's Screen 347. Most of the world does not speak English. Their keyboards may not even display Roman characters. However the Internet Domain Name System requires a Web Address to be typed in English. The System enables a Visitor to remain in their local language.

Fig 16 demonstrates that a WAP device 348 that connects to the Database of the Central Computer 349 may search for any Web Address. If the Record found has listed telephone number(s) a telephone call may be immediately placed to any of the numbers displayed. If the Record contains a Web Address that is WAP enabled the Visitor may immediately access the Web Site. If the Record accepts e-mail and the WAP device is able to transmit e-mail then the Visitor may send e-mail. Examples: Site 1 accepts e-mail, is WAP enabled and has visible telephone numbers 350; Site 2 is WAP enabled and accepts e-mail 351; Record 3 is an Individual's Virtual Business Card. It has a telephone number visible and accepts e-mail 352; Site 4 has a visible telephone number but its web site is not WAP enabled 353; and Site 5 accepts e-mail but its Web Site is not WAP enabled 354.

The invention provides a method and system for enabling publishers of any material to obtain the most current address of a subscriber by accessing the list of Virtual Business Card ID's that subscribe to their publication stored in the System and obtaining the most current subscription address. The Virtual Business Card ID can store several addresses for an individual including one designated as a mailing address. The present invention provides a system whereby a Virtual Business Card ID user can provide their Virtual Business Card ID to a company that wishes to include them on their mailing list. When the company wishes to send the Virtual Business Card ID a piece of mail, such as a magazine subscription, they notify the Virtual Business Card ID by e-mail the date upon which the next mail will take place. The Virtual Business Card ID owner is thus reminded to correct their subscription address if it has changed. The company then queries the System Database for the most current subscription list and posts the items out. The advantage of this system is that it ensures a high degree of delivery to the most appropriate address. It therefore increases customer loyalty. Frequent travelers will be prompted to subscribe to magazines confident that they will follow them to the relevant address. The invention contemplates providing a Virtual Business Card ID with the ability to suspend a subscription e.g. while overseas. Fig 17 demonstrates how a Virtual Business Card ID enables a person who subscribes to a magazine to always get it sent to their current address. A Publisher wishes to use the Virtual Business Card ID for its subscription database 355. Subscribers provide the magazine with their e-mail address and their Virtual Business Card ID 356. Shortly before the next issue is due to be sent out the publisher sends e-mail to all subscribers with Virtual

Business Card ID's reminding them to check the Virtual Business Card ID subscription address is current 357. Individual Virtual Business Card ID owners' correct their address information in the Database as required 358. Publisher compiles current address list from Virtual Business Card ID's 359. Publisher ships magazine to current addresses 360.

CLAIMS

1. A method and system for creating and maintaining a database by networking an unlimited number of computers connected to the Internet to discover new domain names and update details of existing domain names.

2. A method and system for rewarding users of the System who participate in maintaining and updating the data within the System.

3. A method and system for expanding the database in real time in response to a search request so that it appears to contain information about every Web Address, individuals associated with a Web Site and keywords such as registered trade marks.

4. A method and system for protecting an on-line Database from being copied by computer programs such as Spiders or Crawlers as well as individuals seeking to copy multiple records, while transparently permitting human requests to pass through.

5. A method and system for enabling users of an on-line System to communicate in real time with other users of the System via Collaborative Instant Messaging.

6. A method and system for enabling Customer Services Center Representatives to communicate in real time with multiple users of an on-line System simultaneously using an Instant Messaging Interface that includes integrated access to a frequently asked questions database and a database of conversation fragments so that responses may be entered with a click of a mouse.

7. A method and system for enabling a Searcher to enter a Search Request in a Search Box without the need to describe the nature of the information being searched for.

8. A method and system for enabling a Searcher to enter a keyword such as a Trade Mark (Media Locators) into the Search Box and be directed to a Third Party Web Site which is the registered owner of the keyword.

9. A method and system for enabling users of an on-line System to search a Database directly from their PC's desktop through software entitled the Search Bar without the need to first load their Web Browser or recall the URL of the Web Site where the system resides.

10. A method and system for branding and re-branding the Search Bar so that the "skin" and hyperlinks embedded can be changed from a Central Computer.

11. A method and system for enabling third party Web Sites to embed the Search Bar into their web site so that a search of the Database may be initiated from any Web Site.

12. A method and system for creating Virtual Business Cards (Virtual Business Card ID's) which record information about an individual such as name and address details.

13. A method and system for enabling Virtual Business Card ID users to tag other Virtual Business Card ID's to create an on-line Address Book accessible from any Internet Connected Device.

14. A method and system for enabling Record Managers to create and deploying a local language URL.

15. A method and system for enabling publishers of any material to obtain the most current address of a subscriber by accessing the list of Virtual Business Card ID's that subscribe to their publication stored in the System and obtaining the most current subscription address.

Fig 1

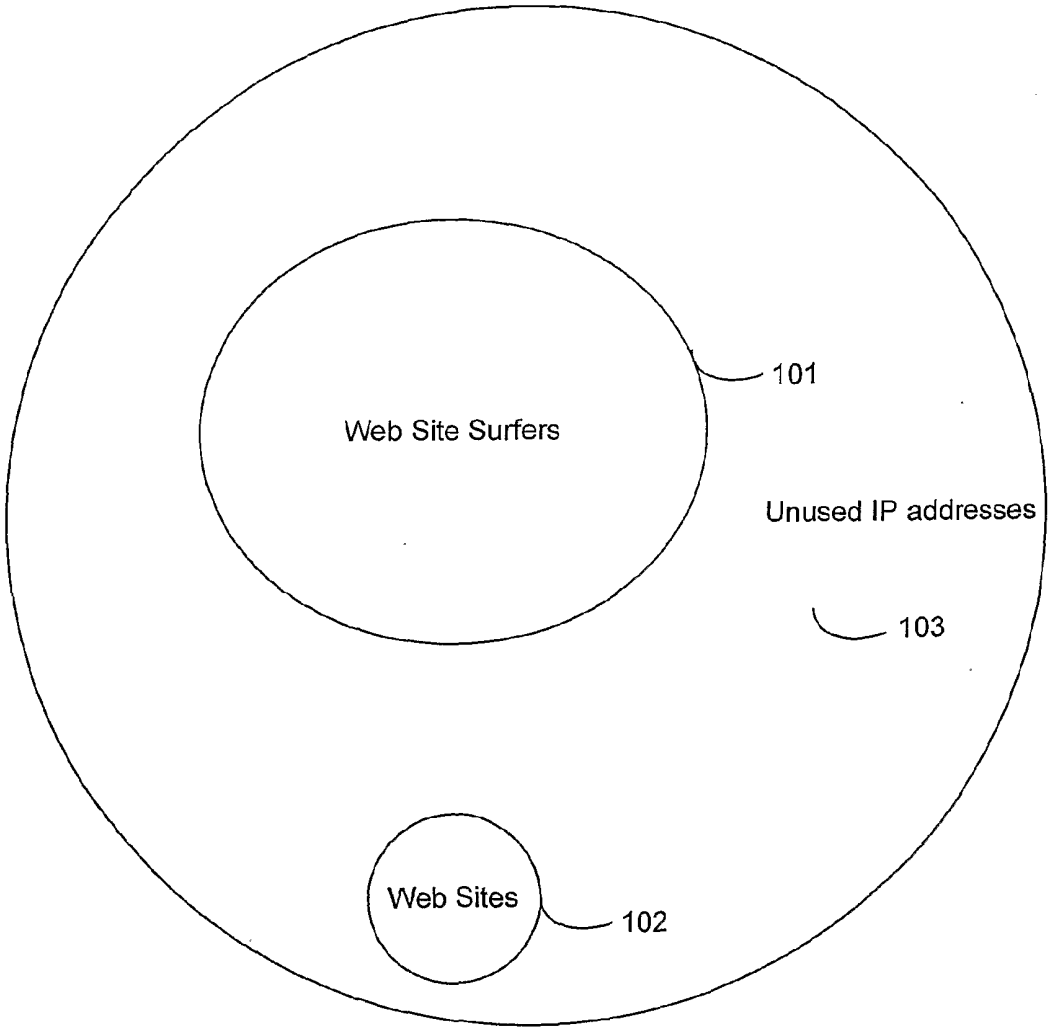
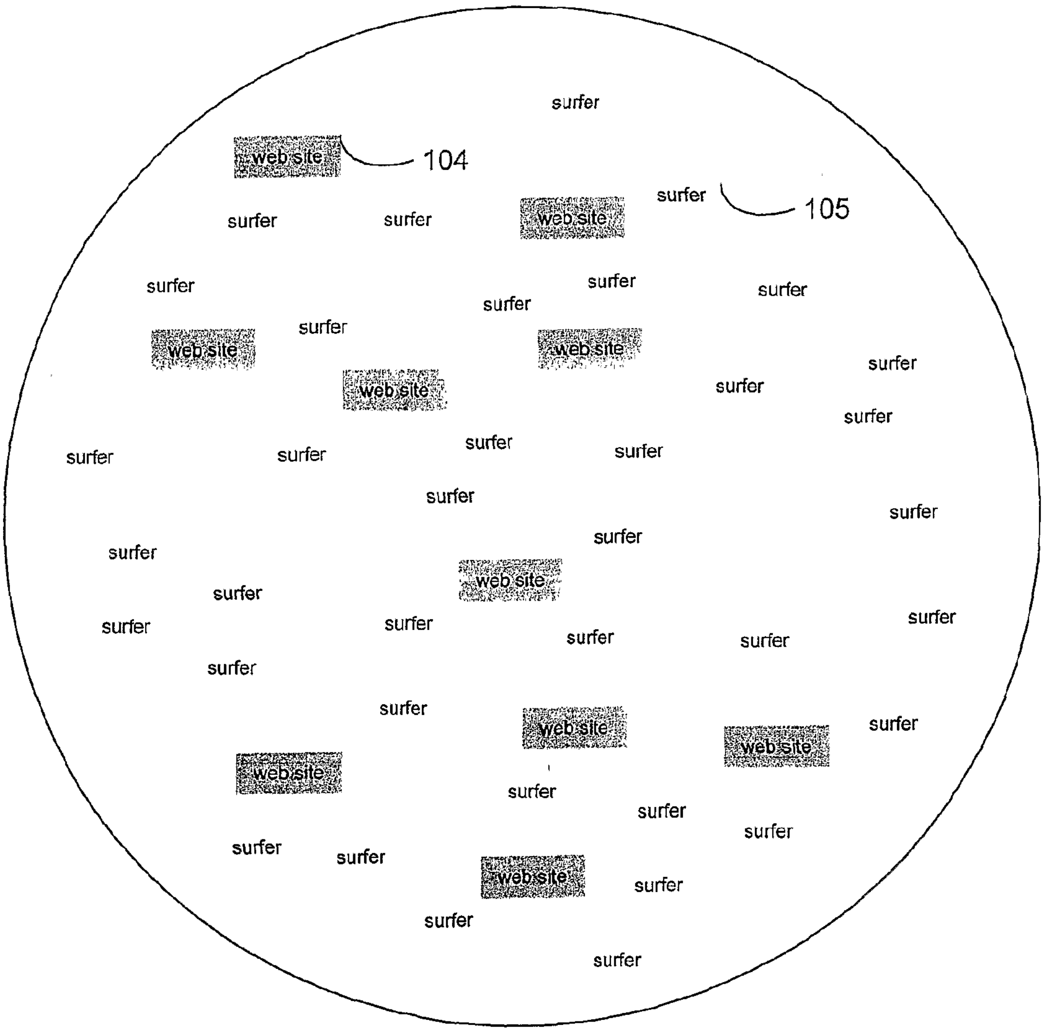


Fig 2


surfer
web site
104
surfer
105
surfer
surfer
web site
surfer
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surfer
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surfer
web site
surfer
surfer
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Fig 3

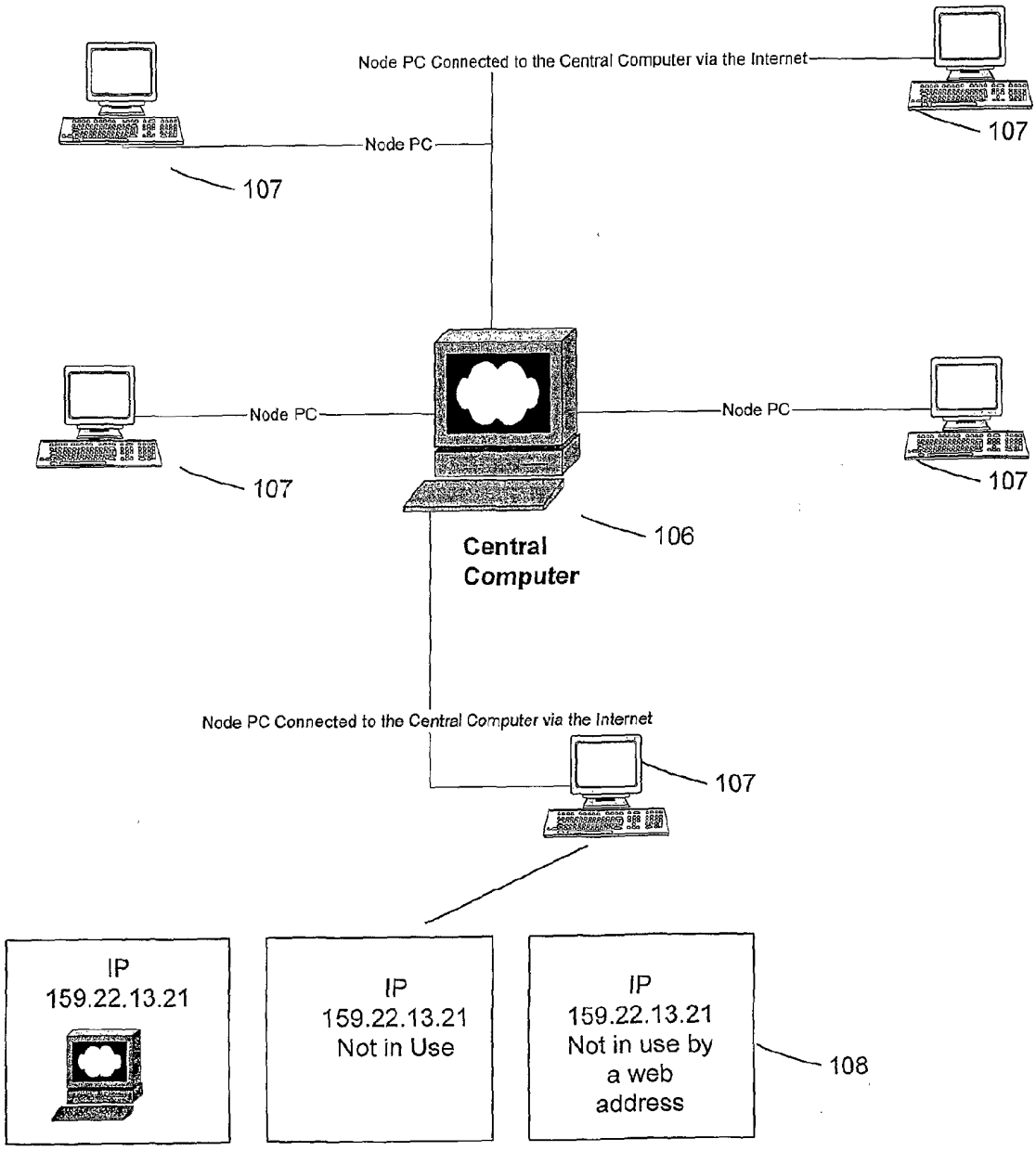

Node PC Connected to the Central Computer via the Internet
Node PC
107
107
Node PC
Node PC
107
107
106
Central Computer
Node PC Connected to the Central Computer via the Internet
107
IP 159.22.13.21
IP 159.22.13.21 Not in Use
IP 159.22.13.21 Not in use by a web address
108

Fig 3a

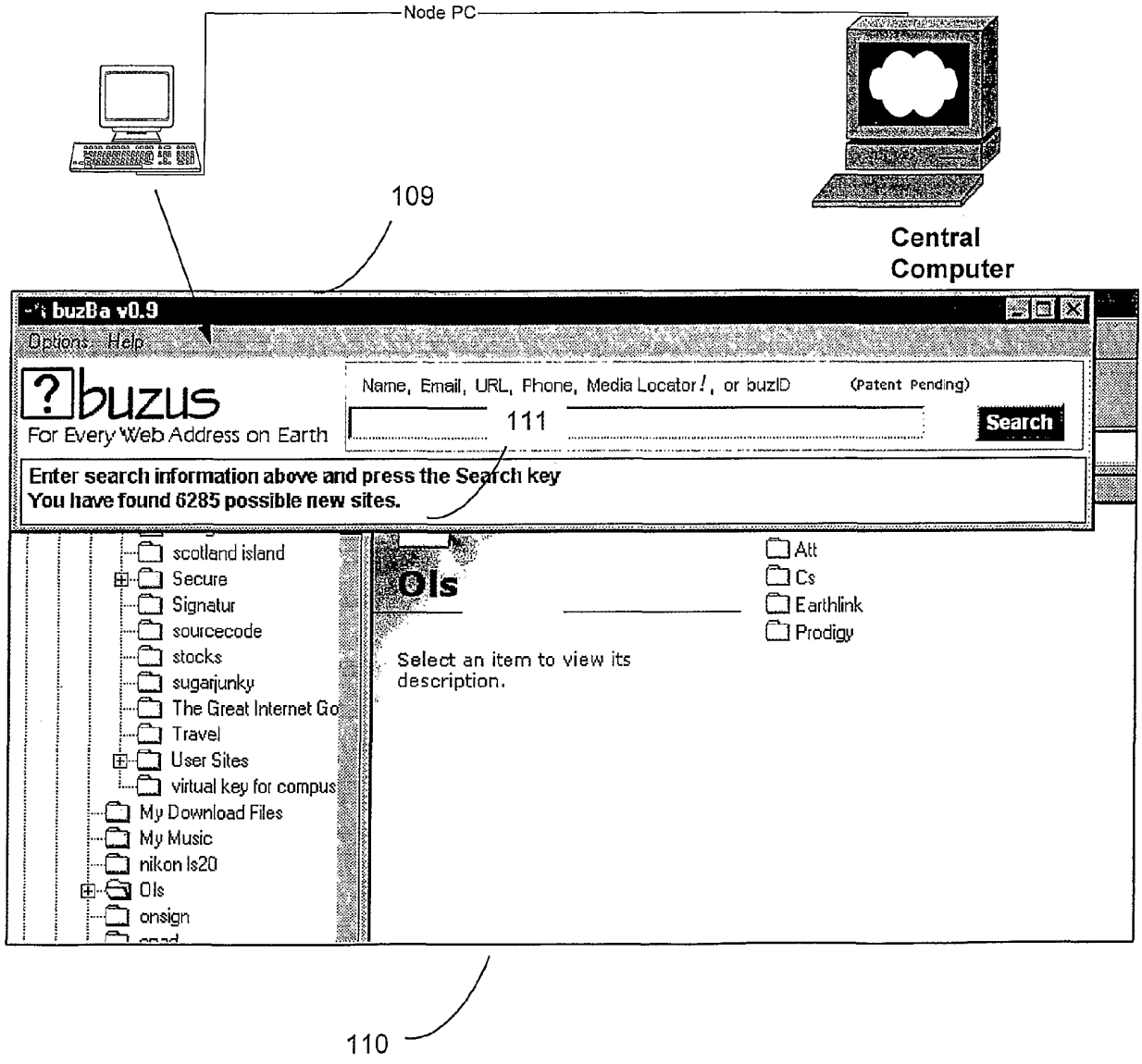
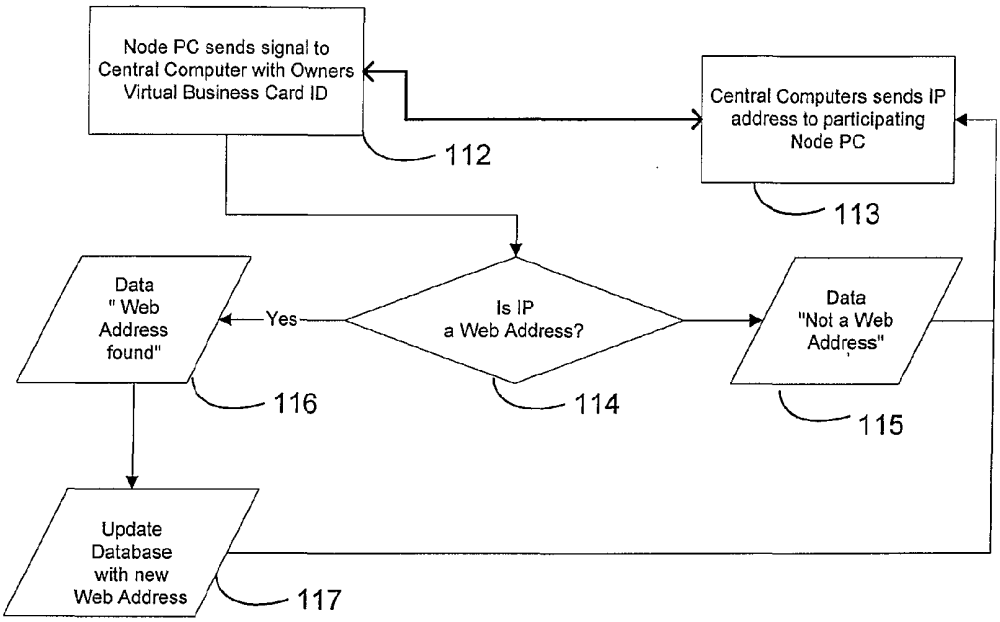

Node PC
109
Central Computer
buzBa v0.9
Options Help
buzus
For Every Web Address on Earth
Name, Email, URL, Phone, Media Locator!, or buzID
(Patent Pending)
111
Search
Enter search information above and press the Search key
You have found 6285 possible new sites.
scotland island
Secure
Signatur
sourcecode
stocks
sugarjunky
The Great Internet Go
Travel
User Sites
virtual key for compus
My Download Files
My Music
nikon ls20
Ols
onsign
Ols
Select an item to view its description.
Att
Cs
Earthlink
Prodigy
110

Fig 3b


Node PC sends signal to Central Computer with Owners Virtual Business Card ID
112
Central Computers sends IP address to participating Node PC
113
Data " Web Address found"
Yes
Is IP a Web Address?
114
Data "Not a Web Address"
115
116
Update Database with new Web Address
117

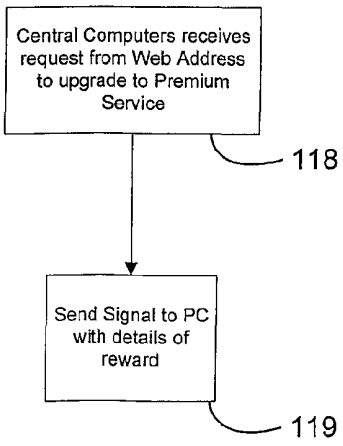

Central Computers receives request from Web Address to upgrade to Premium Service
118
Send Signal to PC with details of reward
119

Fig 4

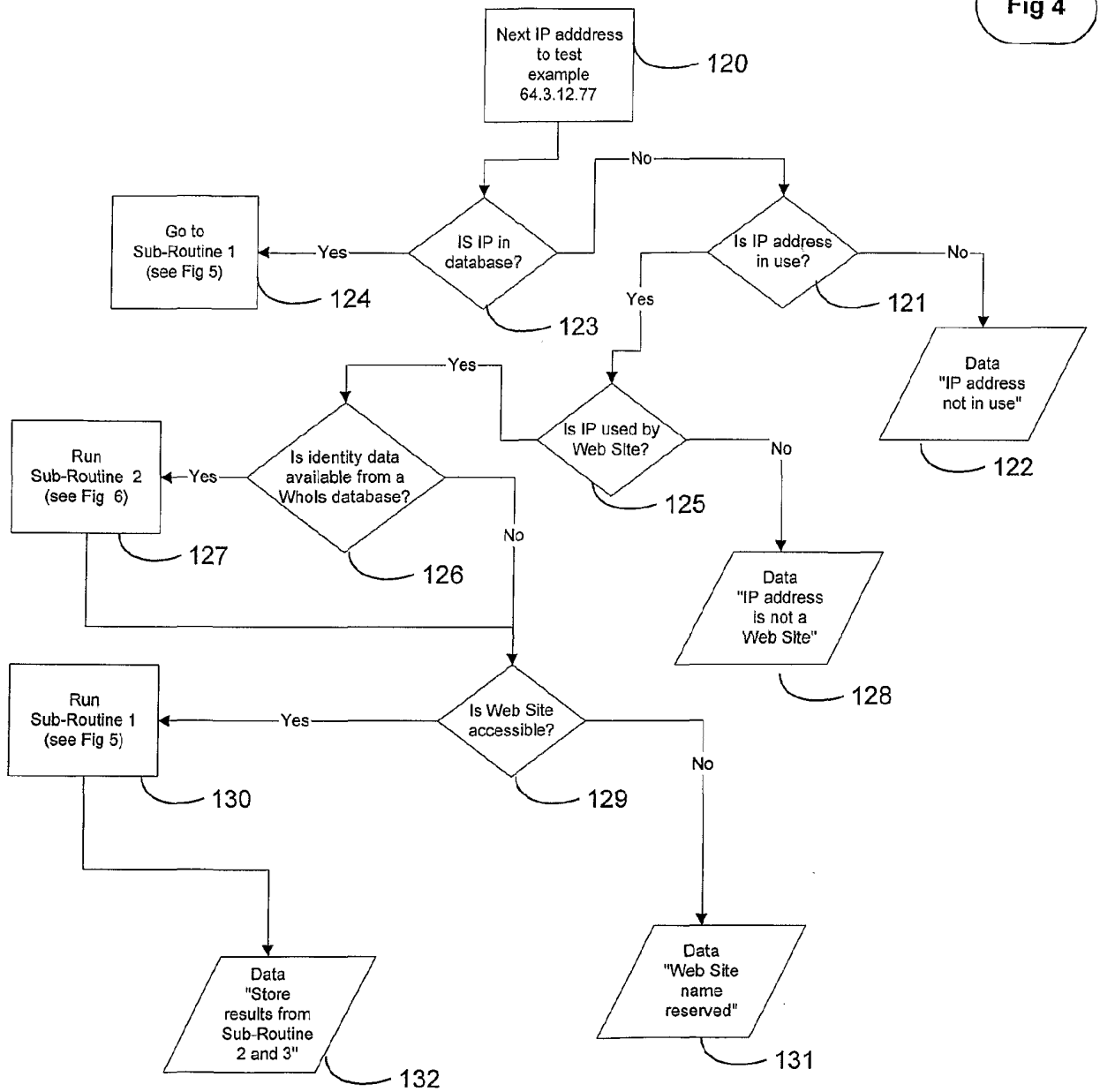

Next IP adddress to test example 64.3.12.77
120
IS IP in database?
123
Yes
Go to Sub-Routine 1 (see Fig 5)
124
No
Is IP address in use?
121
Yes
No
Data "IP address not in use"
122
Is IP used by Web Site?
125
Yes
No
Is identity data available from a WhoIs database?
126
Yes
Run Sub-Routine 2 (see Fig 6)
127
No
Data "IP address is not a Web Site"
128
Is Web Site accessible?
129
Yes
No
Run Sub-Routine 1 (see Fig 5)
130
Data "Store results from Sub-Routine 2 and 3"
132
Data "Web Site name reserved"
131

Fig 5

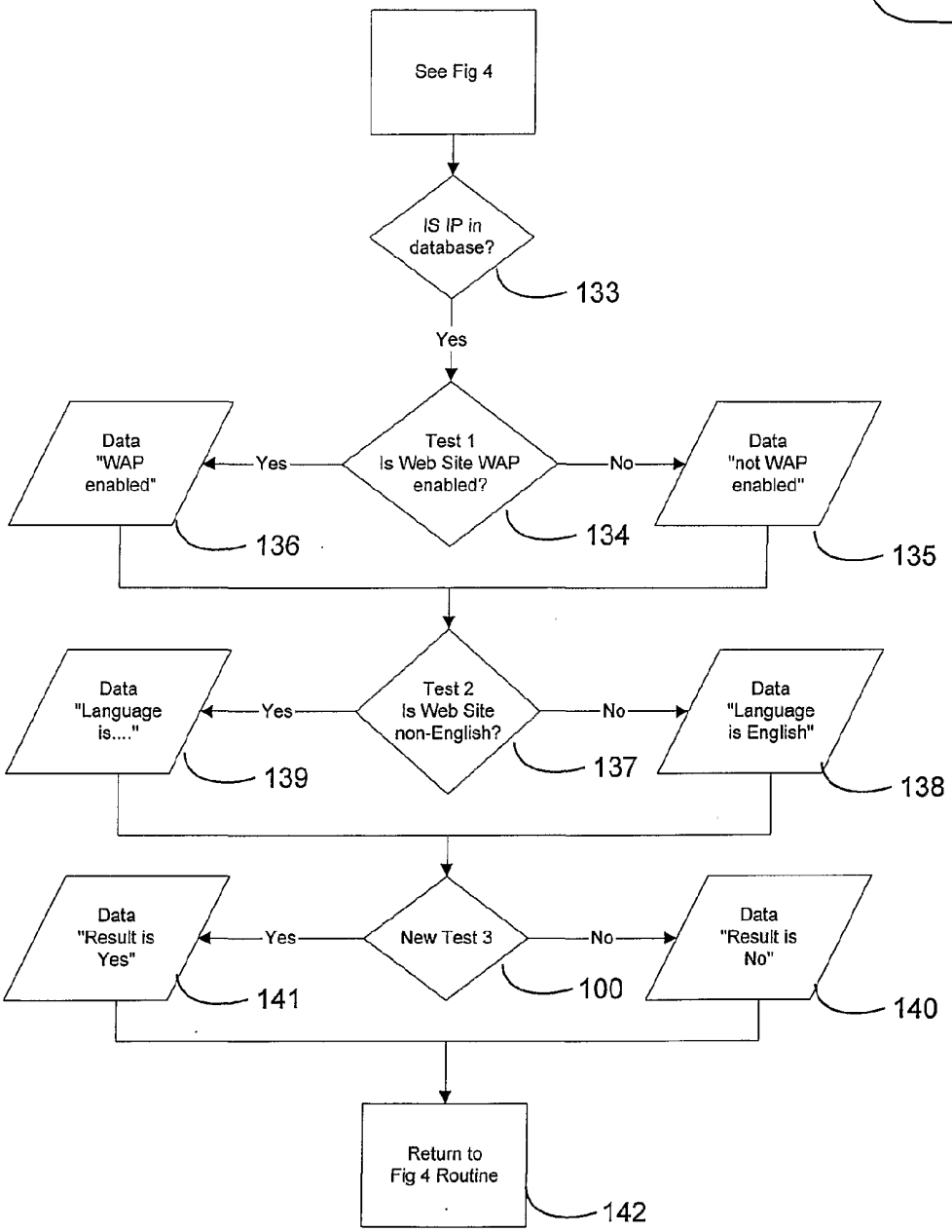

See Fig 4
IS IP in database?
133
Yes
Test 1 Is Web Site WAP enabled?
134
Yes
Data "WAP enabled"
136
No
Data "not WAP enabled"
135
Test 2 Is Web Site non-English?
137
Yes
Data "Language is...."
139
No
Data "Language is English"
138
New Test 3
100
Yes
Data "Result is Yes"
141
No
Data "Result is No"
140
Return to Fig 4 Routine
142

Fig 6

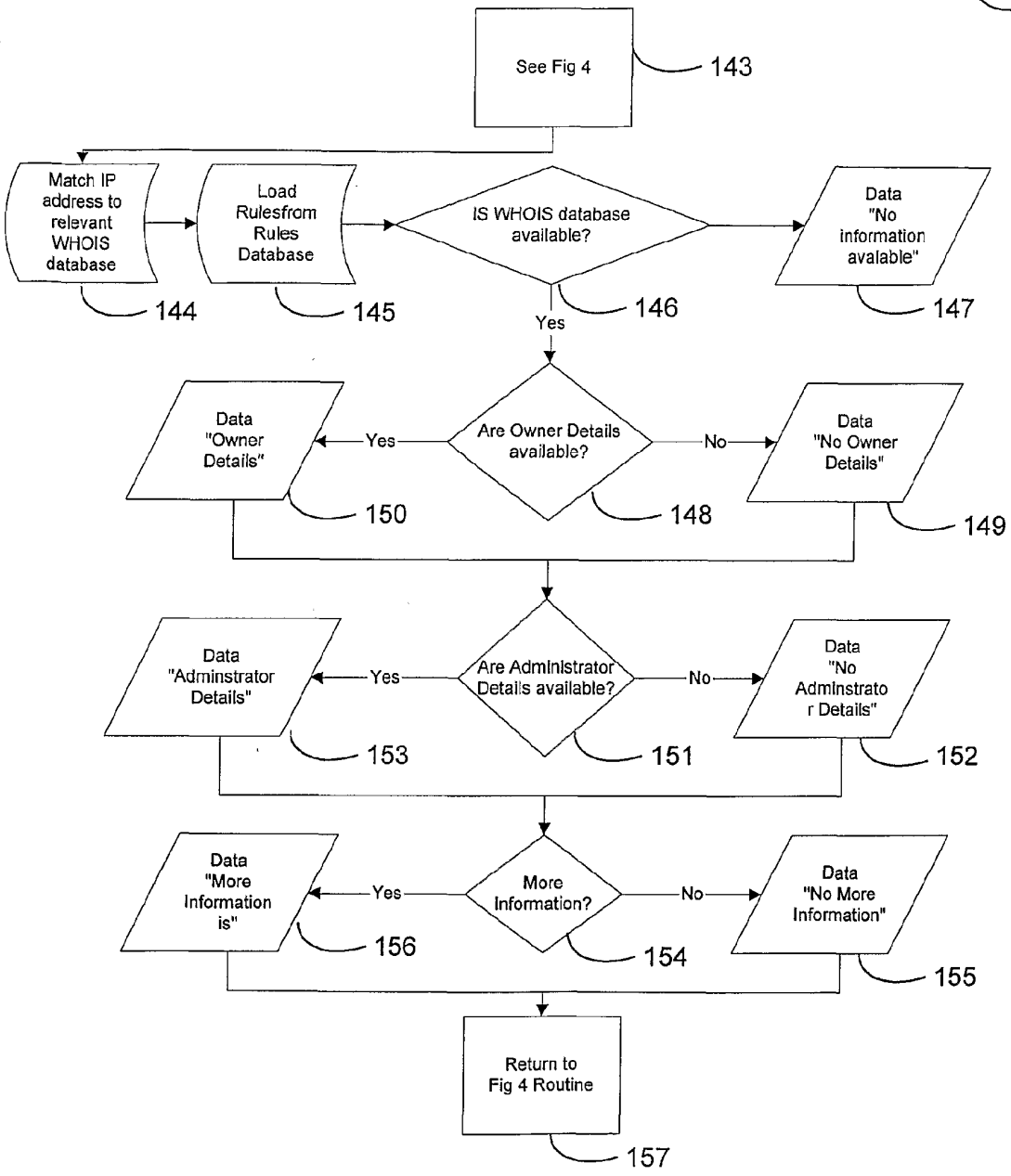

See Fig 4
143
Match IP address to relevant WHOIS database
144
Load Rulesfrom Rules Database
145
IS WHOIS database available?
146
Data "No information avalable"
147
Yes
Data "Owner Details"
150
Yes
Are Owner Details available?
148
No
Data "No Owner Details"
149
Data "Adminstrator Details"
153
Yes
Are Administrator Details available?
151
No
Data "No Adminstrato r Details"
152
Data "More Information is"
156
Yes
More Information?
154
No
Data "No More Information"
155
Return to Fig 4 Routine
157

Fig 6a

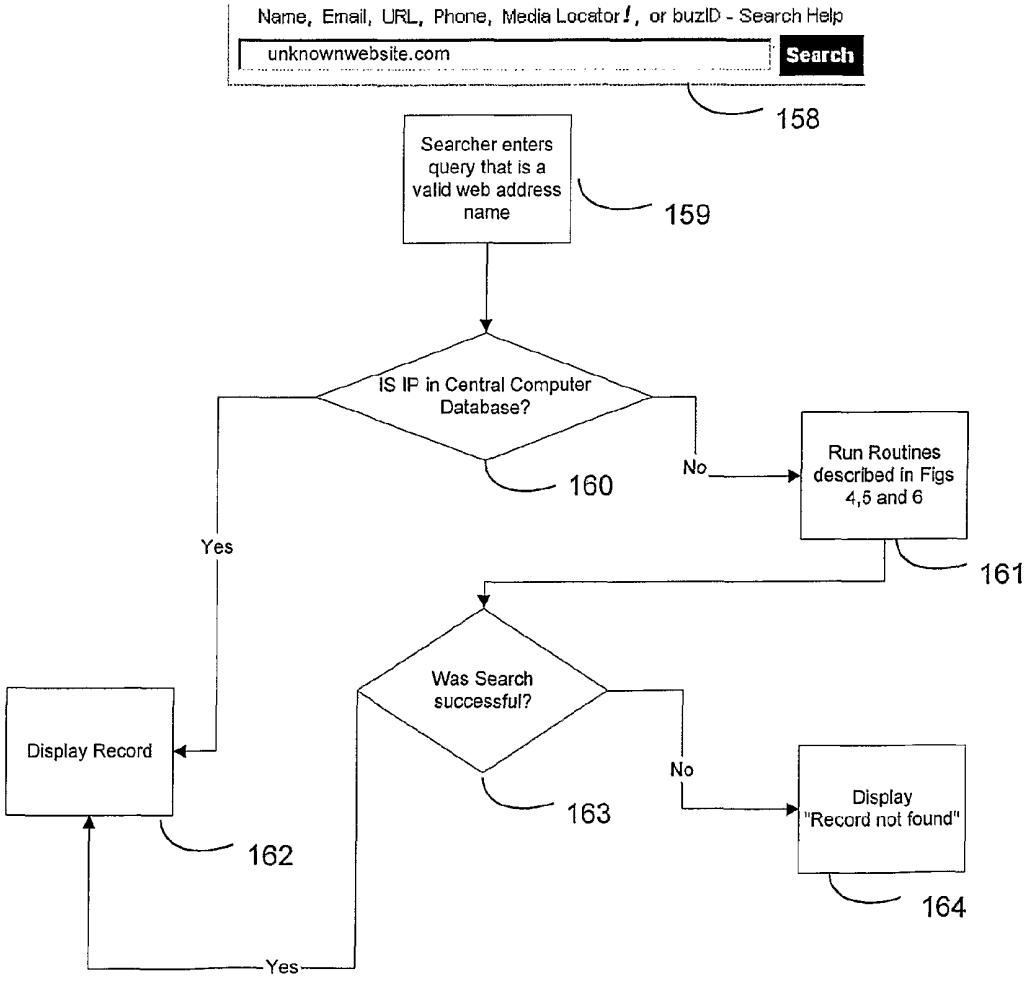

Name, Email, URL, Phone, Media Locator!, or buzID - Search Help
unknownwebsite.com
Search
158
Searcher enters query that is a valid web address name
159
IS IP in Central Computer Database?
160
No
Run Routines described in Figs 4,5 and 6
161
Yes
Was Search successful?
163
No
Display "Record not found"
164
Display Record
162
Yes

Fig 7

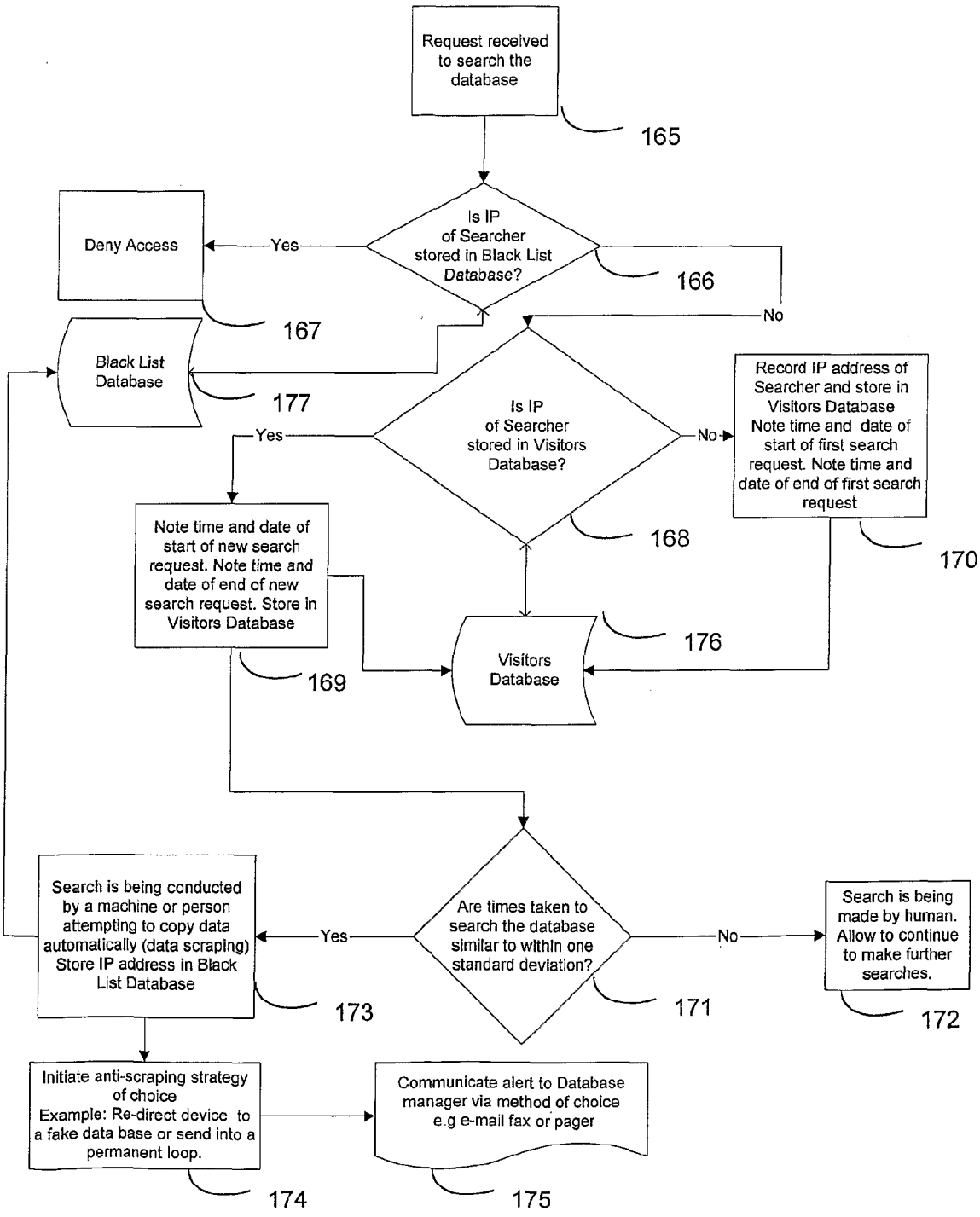

Request received to search the database
165
Is IP of Searcher stored in Black List Database?
166
Yes
Deny Access
167
No
Black List Database
177
Is IP of Searcher stored in Visitors Database?
168
Yes
No
Record IP address of Searcher and store in Visitors Database Note time and date of start of first search request. Note time and date of end of first search request
170
Note time and date of start of new search request. Note time and date of end of new search request. Store in Visitors Database
169
Visitors Database
176
Are times taken to search the database similar to within one standard deviation?
171
Yes
No
Search is being conducted by a machine or person attempting to copy data automatically (data scraping) Store IP address in Black List Database
173
Search is being made by human. Allow to continue to make further searches.
172
Initiate anti-scraping strategy of choice
Example: Re-direct device to a fake data base or send into a permanent loop.
174
Communicate alert to Database manager via method of choice e.g e-mail fax or pager
175

Fig 8

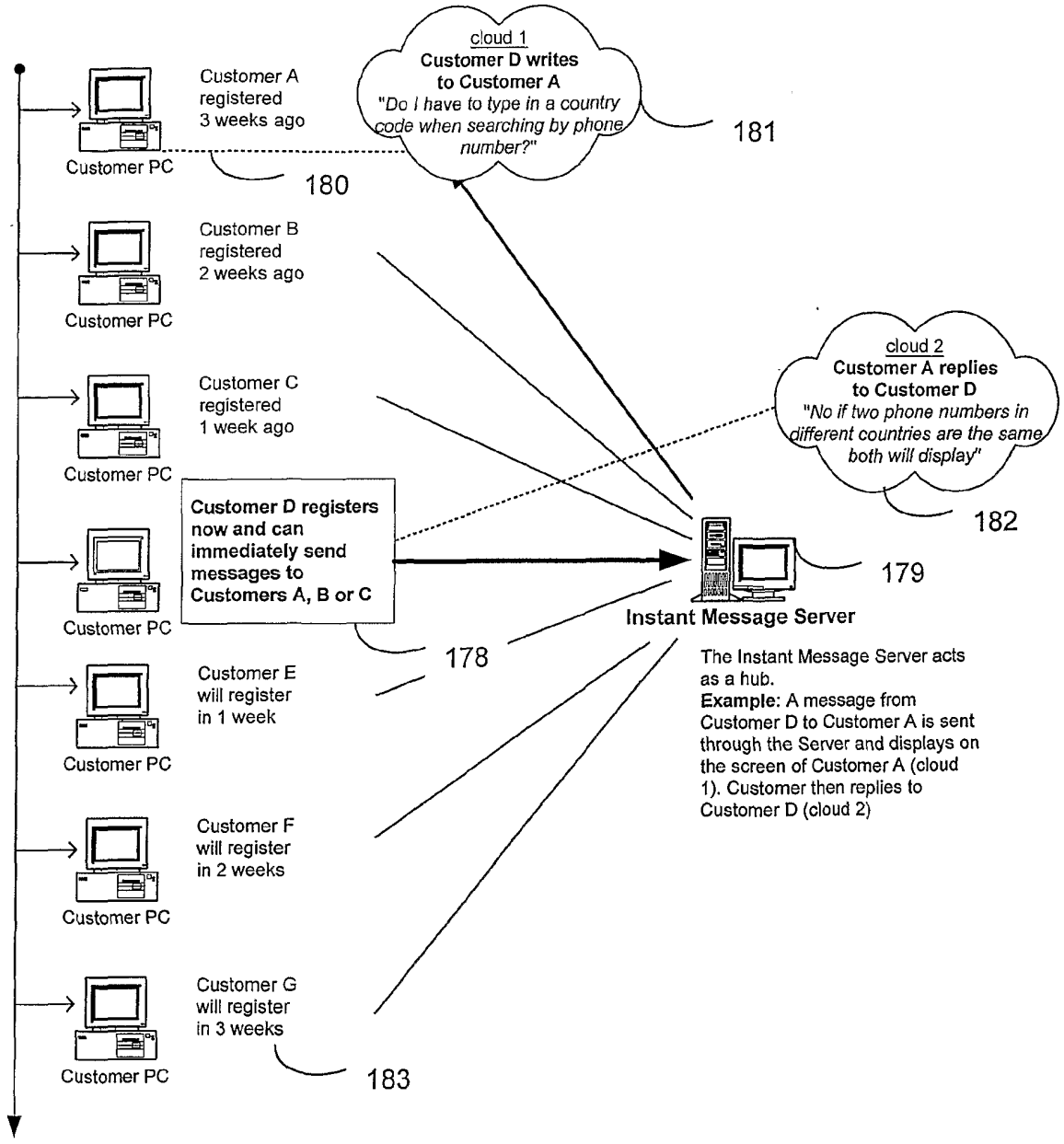

cloud 1
Customer D writes to Customer A
"Do I have to type in a country code when searching by phone number?"
181
Customer A registered 3 weeks ago
Customer PC
180
Customer B registered 2 weeks ago
Customer PC
Customer C registered 1 week ago
Customer PC
Customer D registers now and can immediately send messages to Customers A, B or C
Customer PC
178
Customer E will register in 1 week
Customer PC
Customer F will register in 2 weeks
Customer PC
Customer G will register in 3 weeks
Customer PC
183
cloud 2
Customer A replies to Customer D
"No if two phone numbers in different countries are the same both will display"
182
179
Instant Message Server
The Instant Message Server acts as a hub.
Example: A message from Customer D to Customer A is sent through the Server and displays on the screen of Customer A (cloud 1). Customer then replies to Customer D (cloud 2)

Fig 9

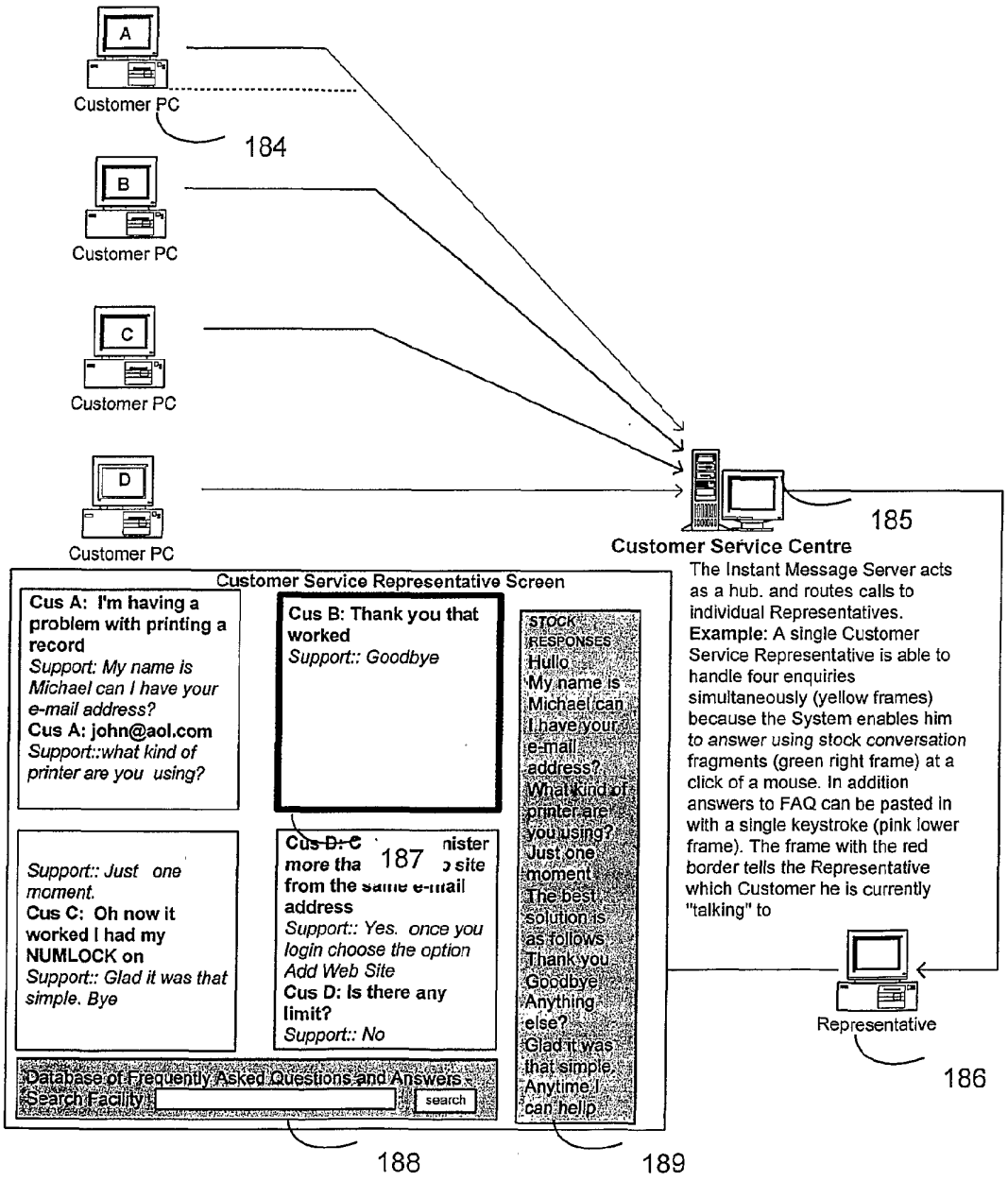
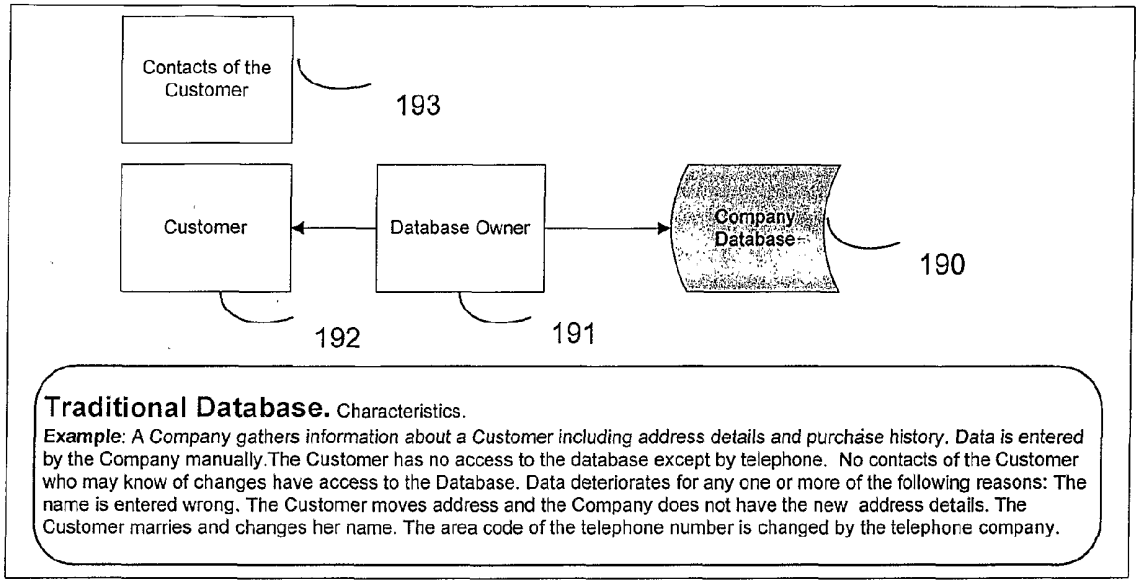
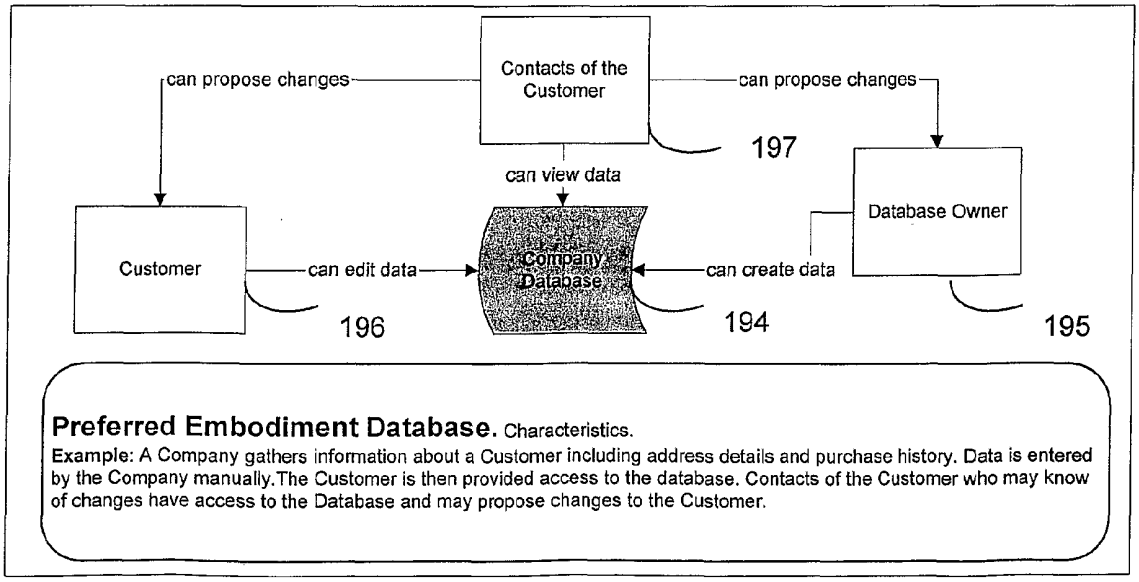

A
Customer PC
184
B
Customer PC
C
Customer PC
D
Customer PC
185
Customer Service Centre
The Instant Message Server acts as a hub. and routes calls to individual Representatives.
Example: A single Customer Service Representative is able to handle four enquiries simultaneously (yellow frames) because the System enables him to answer using stock conversation fragments (green right frame) at a click of a mouse. In addition answers to FAQ can be pasted in with a single keystroke (pink lower frame). The frame with the red border tells the Representative which Customer he is currently "talking" to
Representative
186
Customer Service Representative Screen
Cus A: I'm having a problem with printing a record
Support: My name is Michael can I have your e-mail address?
Cus A: john@aol.com
Support::what kind of printer are you using?
Cus B: Thank you that worked
Support:: Goodbye
STOCK RESPONSES
Hullo
My name is Michael can I have your e-mail address?
What kind of printer are you using?
Just one moment
The best solution is as follows
Thank you
Goodbye
Anything else?
Glad it was that simple.
Anytime I can help
Support:: Just one moment.
Cus C: Oh now it worked I had my NUMLOCK on
Support:: Glad it was that simple. Bye
Cus D: C nister more tha site from the same e-mail address
Support:: Yes. once you login choose the option Add Web Site
Cus D: Is there any limit?
Support:: No
187
Database of Frequently Asked Questions and Answers
Search Facility
search
188
189

Fig 10a

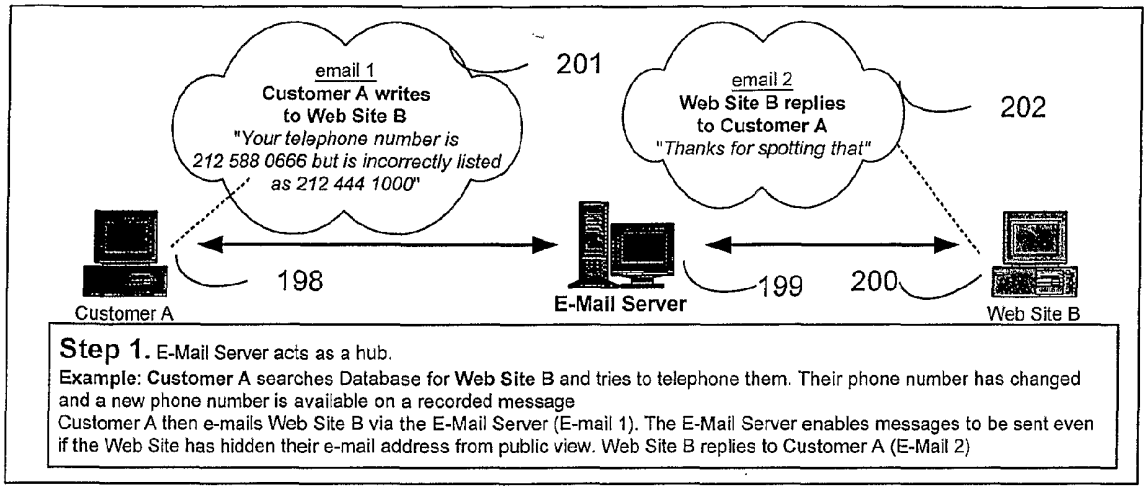


Traditional Database. Characteristics.
Example: A Company gathers information about a Customer including address details and purchase history. Data is entered by the Company manually.The Customer has no access to the database except by telephone. No contacts of the Customer who may know of changes have access to the Database. Data deteriorates for any one or more of the following reasons: The name is entered wrong. The Customer moves address and the Company does not have the new address details. The Customer marries and changes her name. The area code of the telephone number is changed by the telephone company.

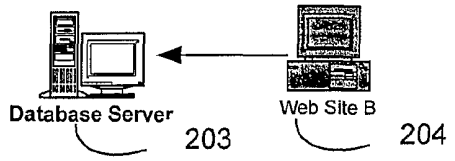


Preferred Embodiment Database. Characteristics.
Example: A Company gathers information about a Customer including address details and purchase history. Data is entered by the Company manually.The Customer is then provided access to the database. Contacts of the Customer who may know of changes have access to the Database and may propose changes to the Customer.

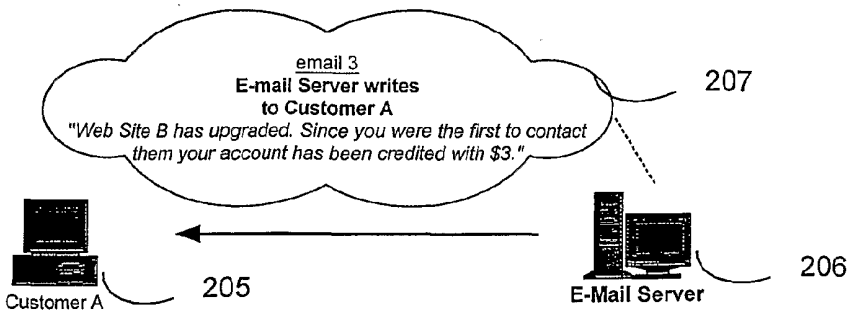
Fig 10b



Step 1. E-Mail Server acts as a hub.
Example: Customer A searches Database for **Web Site** B and tries to telephone them. Their phone number has changed and a new phone number is available on a recorded message
Customer A then e-mails Web Site B via the E-Mail Server (E-mail 1). The E-Mail Server enables messages to be sent even if the Web Site has hidden their e-mail address from public view. Web Site B replies to Customer A (E-Mail 2)



Step 2. In response to Customer A's E-mail Web Site B *realises that the Database is a useful communication tool.* Web Site B decides to upgrade to a Premium Service which enables them to include more details about their Web Site. Web Site B connects to the Database Server and purchase the Premium Service



Step 3. Upon upgrade by Web Site B the E-Mail Server contacts Customer A to notify them that their account has been credited. In our example Customer A earns $3 but the method and amount are determined by business practices. (Email 3)

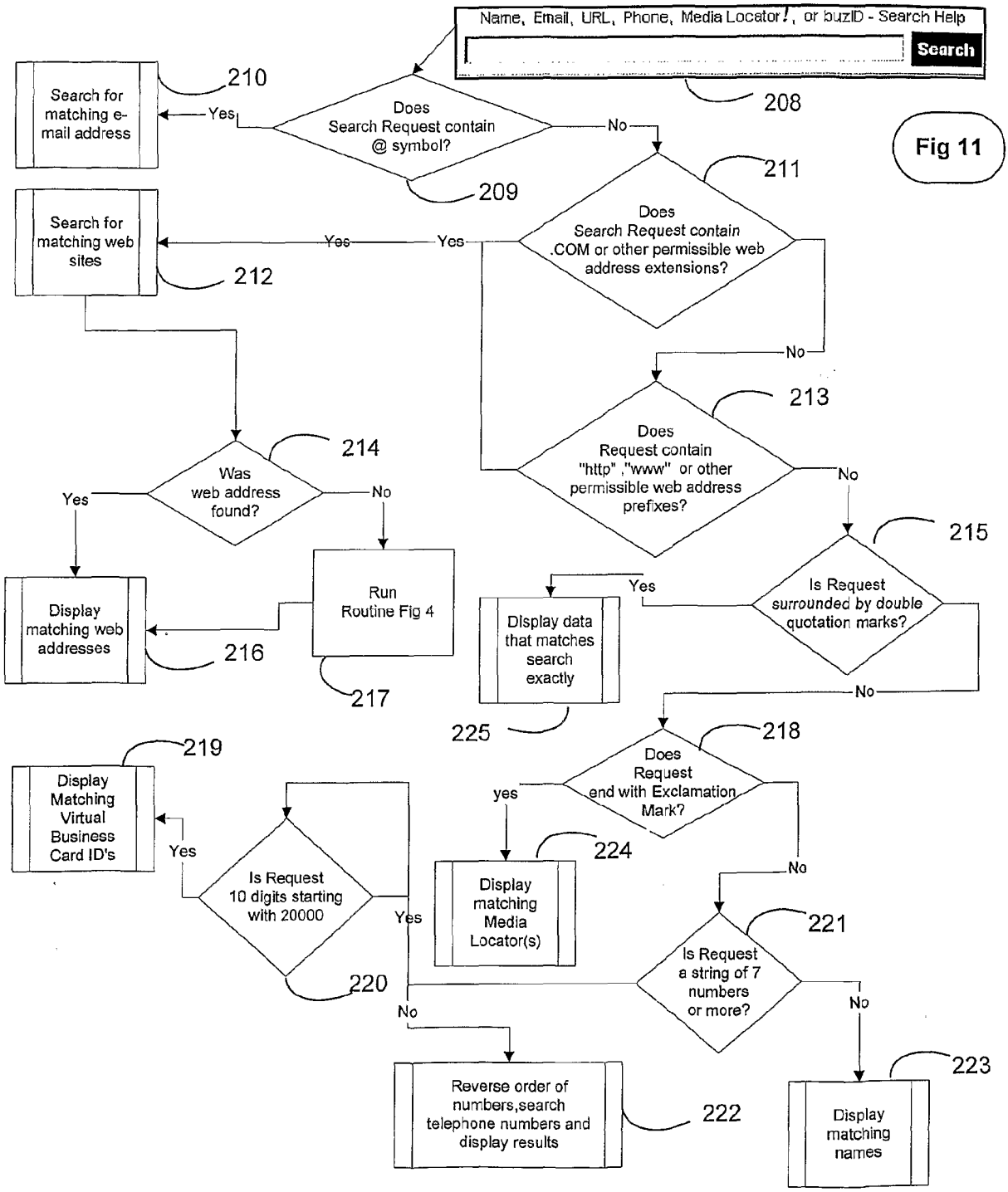

Name, Email, URL, Phone, Media Locator!, or buzID - Search Help
Search
208
Does Search Request contain @ symbol?
209
Yes
No
Search for matching e-mail address
210
Does Search Request contain .COM or other permissible web address extensions?
211
Yes
Search for matching web sites
212
Does Request contain "http","www" or other permissible web address prefixes?
213
No
Was web address found?
214
Yes
No
Run Routine Fig 4
217
Display matching web addresses
216
Is Request surrounded by double quotation marks?
215
Yes
Display data that matches search exactly
225
No
Does Request end with Exclamation Mark?
218
yes
No
Display matching Media Locator(s)
224
Is Request a string of 7 numbers or more?
221
Yes
No
Is Request 10 digits starting with 20000
220
Yes
No
Display Matching Virtual Business Card ID's
219
Reverse order of numbers,search telephone numbers and display results
222
Display matching names
223

Fig 11

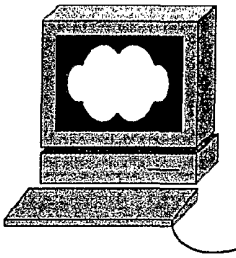
Fig 12

226

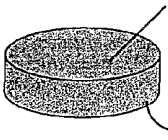
Step1 Visitor reads an Advert which includes a Media Locator

227

Step 2 Visitor types in the Media Locator in the Search Box



228



229

Step 3 Central Computer directs Visitor to relevant Web Site and updates record counter

230

Step 4 Relevant Web Site Displays

Fig 13

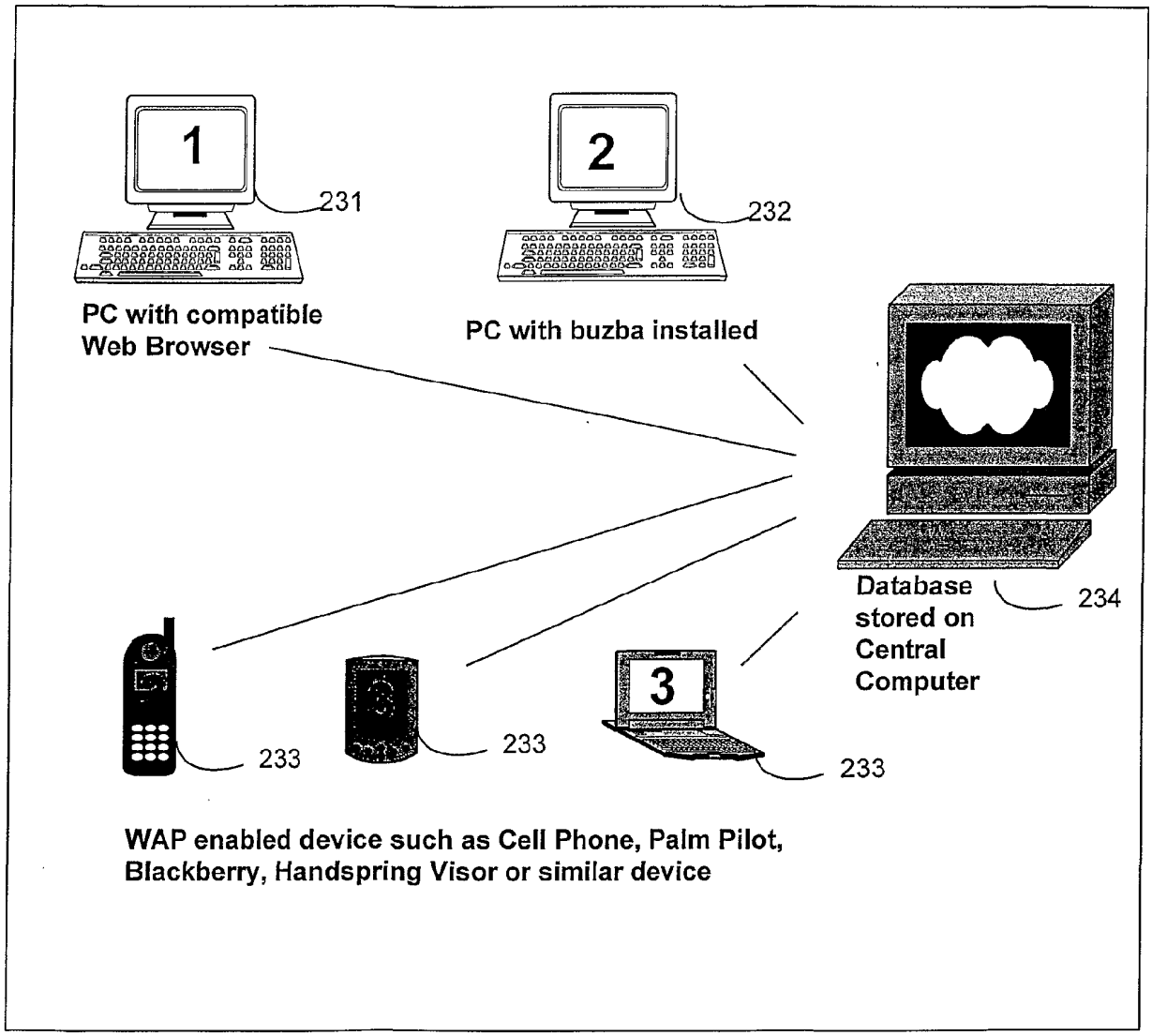

1
231
2
232
PC with compatible Web Browser
PC with buzba installed
Database stored on Central Computer
234
233
233
3
233
WAP enabled device such as Cell Phone, Palm Pilot, Blackberry, Handspring Visor or similar device

Fig 13a

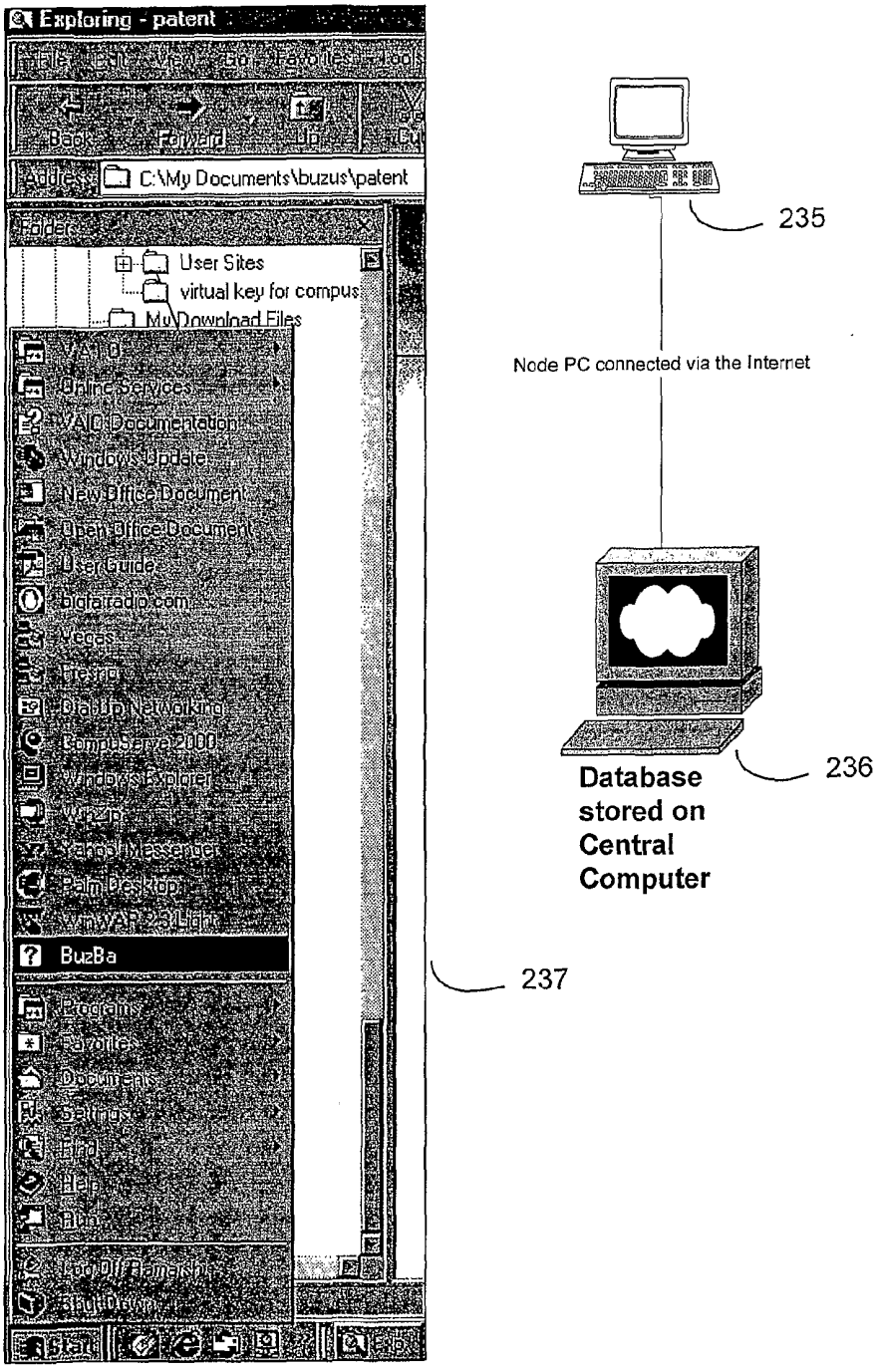
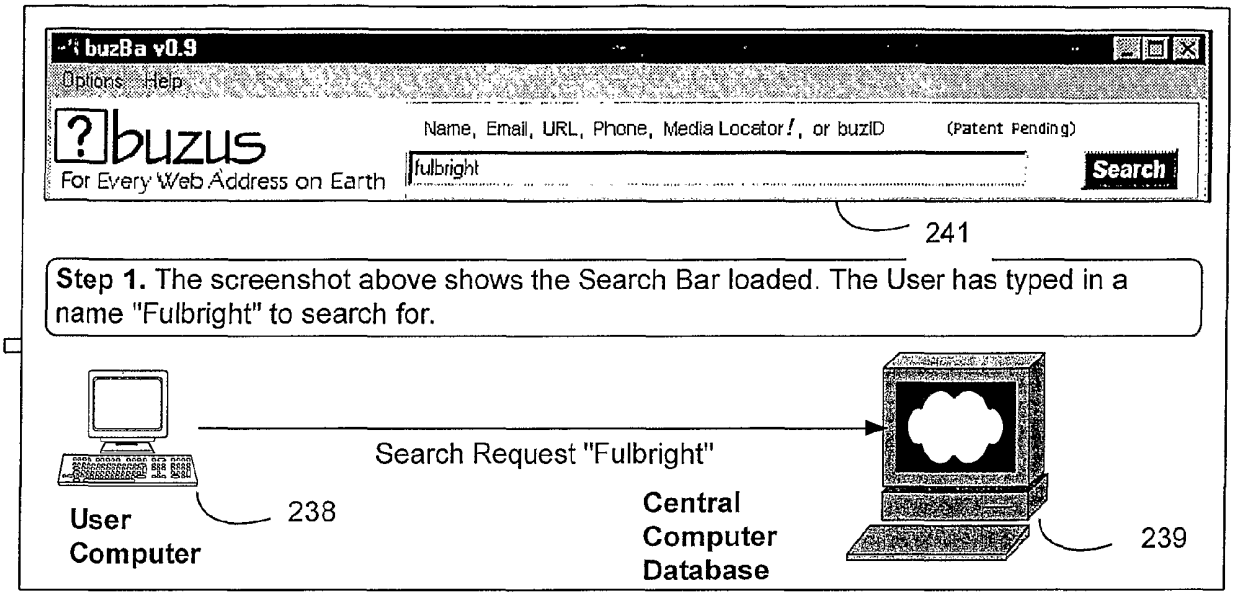

Exploring - patent
C:\My Documents\buzus\patent
User Sites
virtual key for compus
BuzBa
235
Node PC connected via the Internet
236
Database stored on Central Computer
237

Fig 13b


buzBa v0.9
Options Help
buzus
For Every Web Address on Earth
Name, Email, URL, Phone, Media Locator!, or buzID
(Patent Pending)
fulbright
Search
241
Step 1. The screenshot above shows the Search Bar loaded. The User has typed in a name "Fulbright" to search for.
Search Request "Fulbright"
User Computer
238
Central Computer Database
239

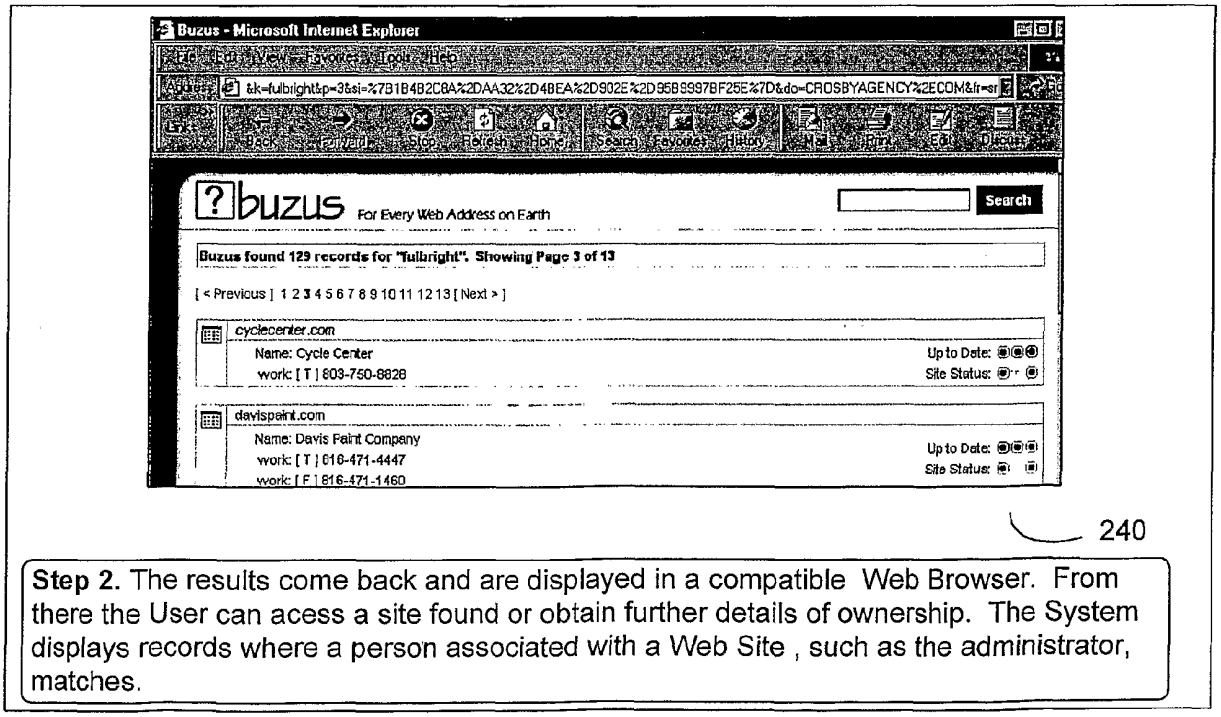
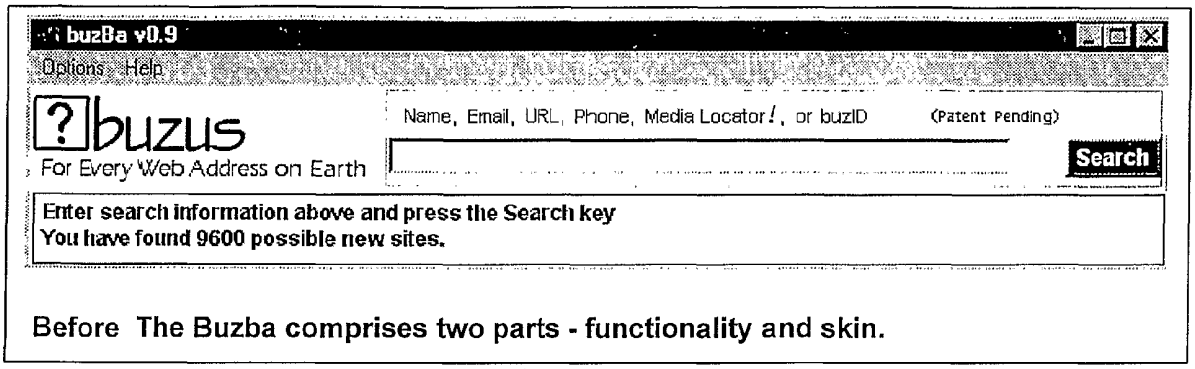
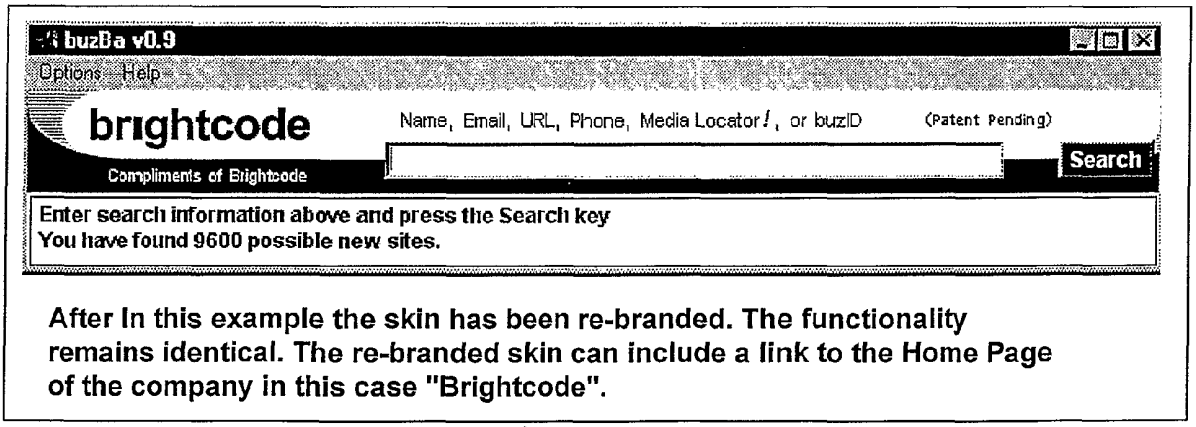

Buzus - Microsoft Internet Explorer
buzus
For Every Web Address on Earth
Search
Buzus found 129 records for "fulbright". Showing Page 3 of 13
[< Previous] 1 2 3 4 5 6 7 8 9 10 11 12 13 [Next >]
cyclecenter.com
Name: Cycle Center
work: [T] 803-750-8828
Up to Date:
Site Status:
davispaint.com
Name: Davis Paint Company
work: [T] 616-471-4447
work: [F] 616-471-1460
Up to Date:
Site Status:
240
Step 2. The results come back and are displayed in a compatible Web Browser. From there the User can acess a site found or obtain further details of ownership. The System displays records where a person associated with a Web Site , such as the administrator, matches.

Fig 13c



Before The Buzba comprises two parts - functionality and skin.

242



After In this example the skin has been re-branded. The functionality remains identical. The re-branded skin can include a link to the Home Page of the company in this case "Brightcode".

243

Fig 13d

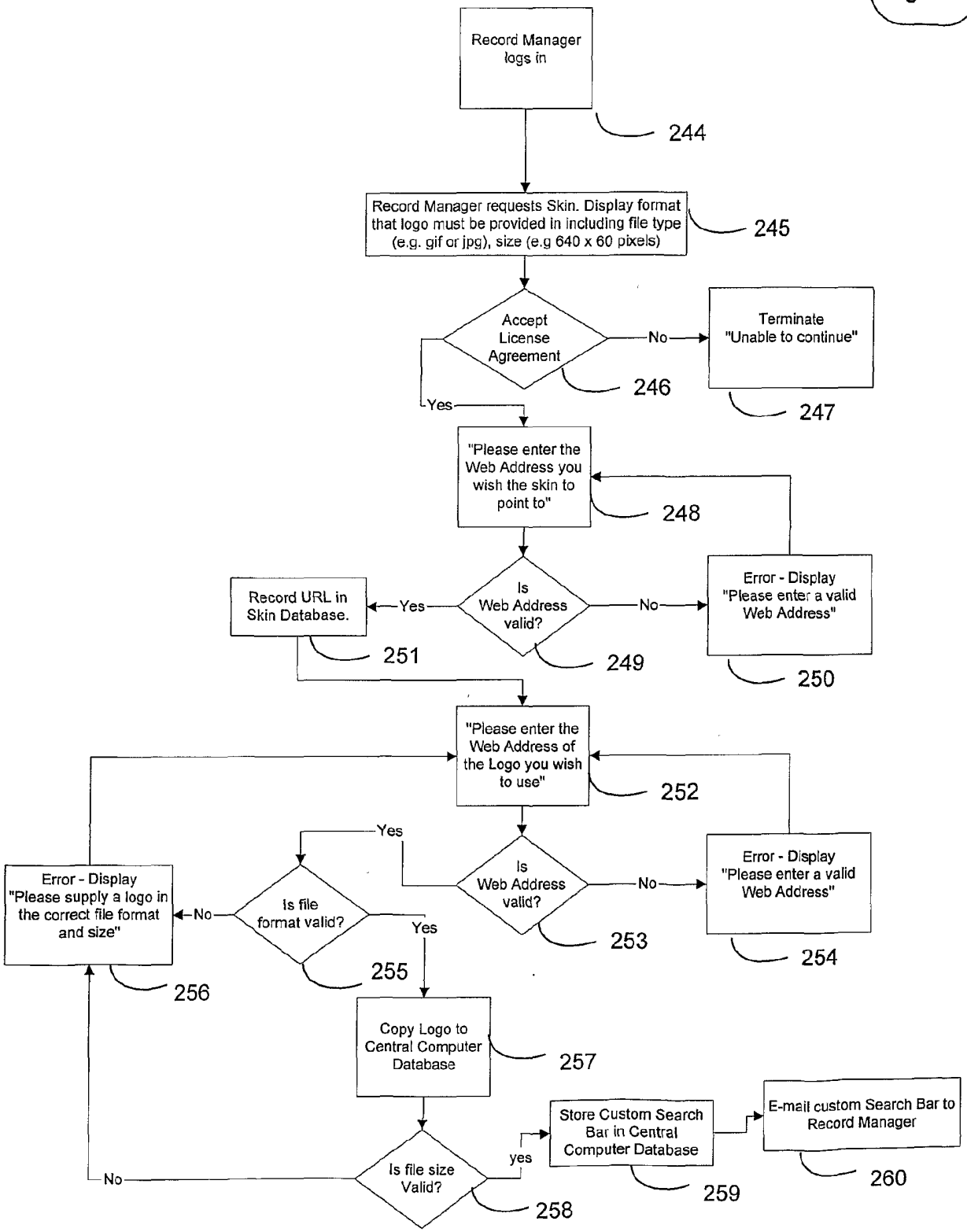

Record Manager logs in
244
Record Manager requests Skin. Display format that logo must be provided in including file type (e.g. gif or jpg), size (e.g 640 x 60 pixels)
245
Accept License Agreement
No
Terminate "Unable to continue"
246
247
Yes
"Please enter the Web Address you wish the skin to point to"
248
Record URL in Skin Database.
Yes
Is Web Address valid?
No
Error - Display "Please enter a valid Web Address"
251
249
250
"Please enter the Web Address of the Logo you wish to use"
252
Yes
Error - Display "Please supply a logo in the correct file format and size"
No
Is file format valid?
Yes
Is Web Address valid?
No
Error - Display "Please enter a valid Web Address"
256
255
253
254
Copy Logo to Central Computer Database
257
Store Custom Search Bar in Central Computer Database
E-mail custom Search Bar to Record Manager
yes
No
Is file size Valid?
259
260
258

Fig 13e

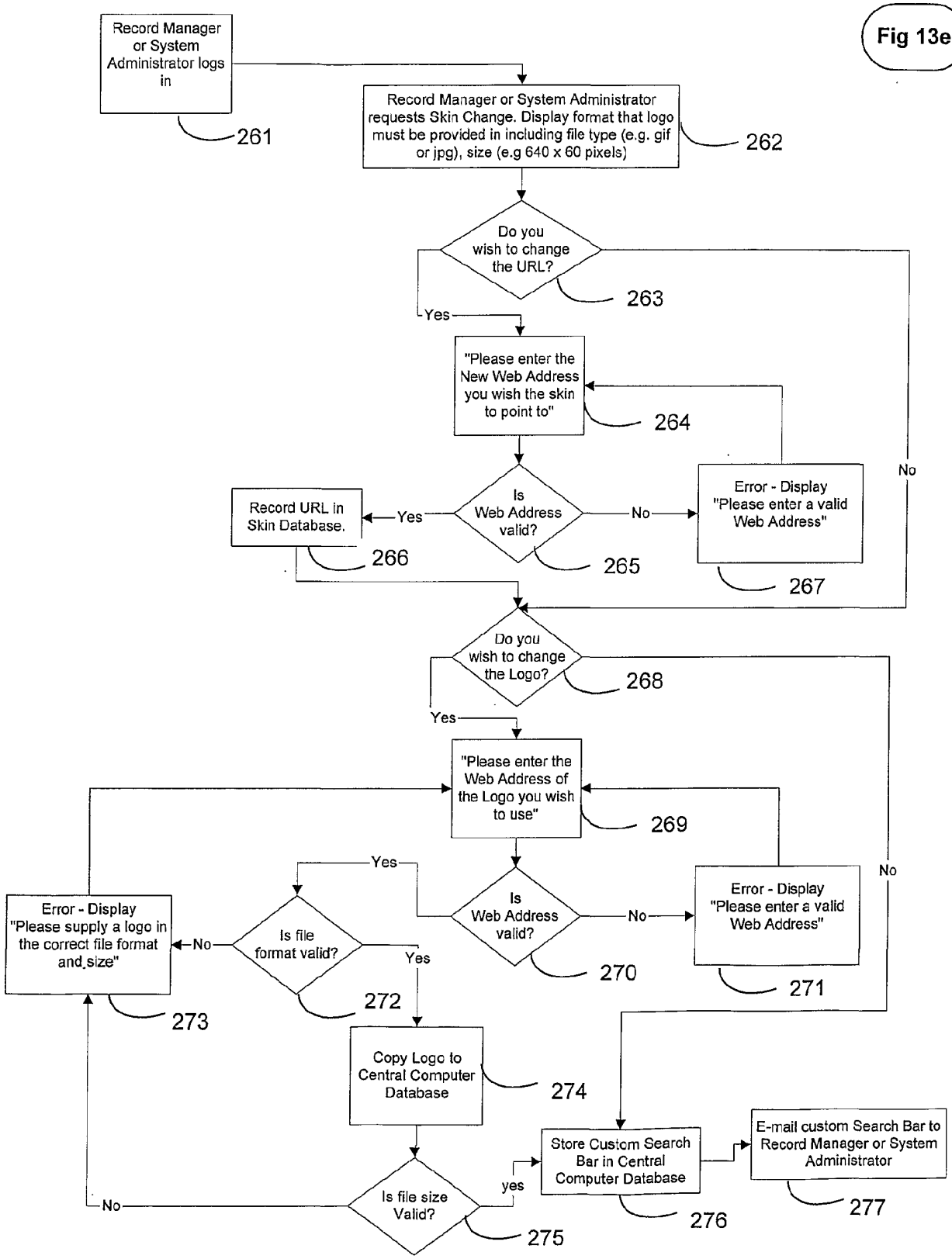

Record Manager or System Administrator logs in
261
Record Manager or System Administrator requests Skin Change. Display format that logo must be provided in including file type (e.g. gif or jpg), size (e.g 640 x 60 pixels)
262
Do you wish to change the URL?
263
Yes
No
"Please enter the New Web Address you wish the skin to point to"
264
Is Web Address valid?
265
Yes
No
Record URL in Skin Database.
266
Error - Display "Please enter a valid Web Address"
267
Do you wish to change the Logo?
268
Yes
No
"Please enter the Web Address of the Logo you wish to use"
269
Is Web Address valid?
270
Yes
No
Error - Display "Please enter a valid Web Address"
271
Is file format valid?
272
Yes
No
Error - Display "Please supply a logo in the correct file format and size"
273
Copy Logo to Central Computer Database
274
Is file size Valid?
275
yes
No
Store Custom Search Bar in Central Computer Database
276
E-mail custom Search Bar to Record Manager or System Administrator
277

Fig 13f

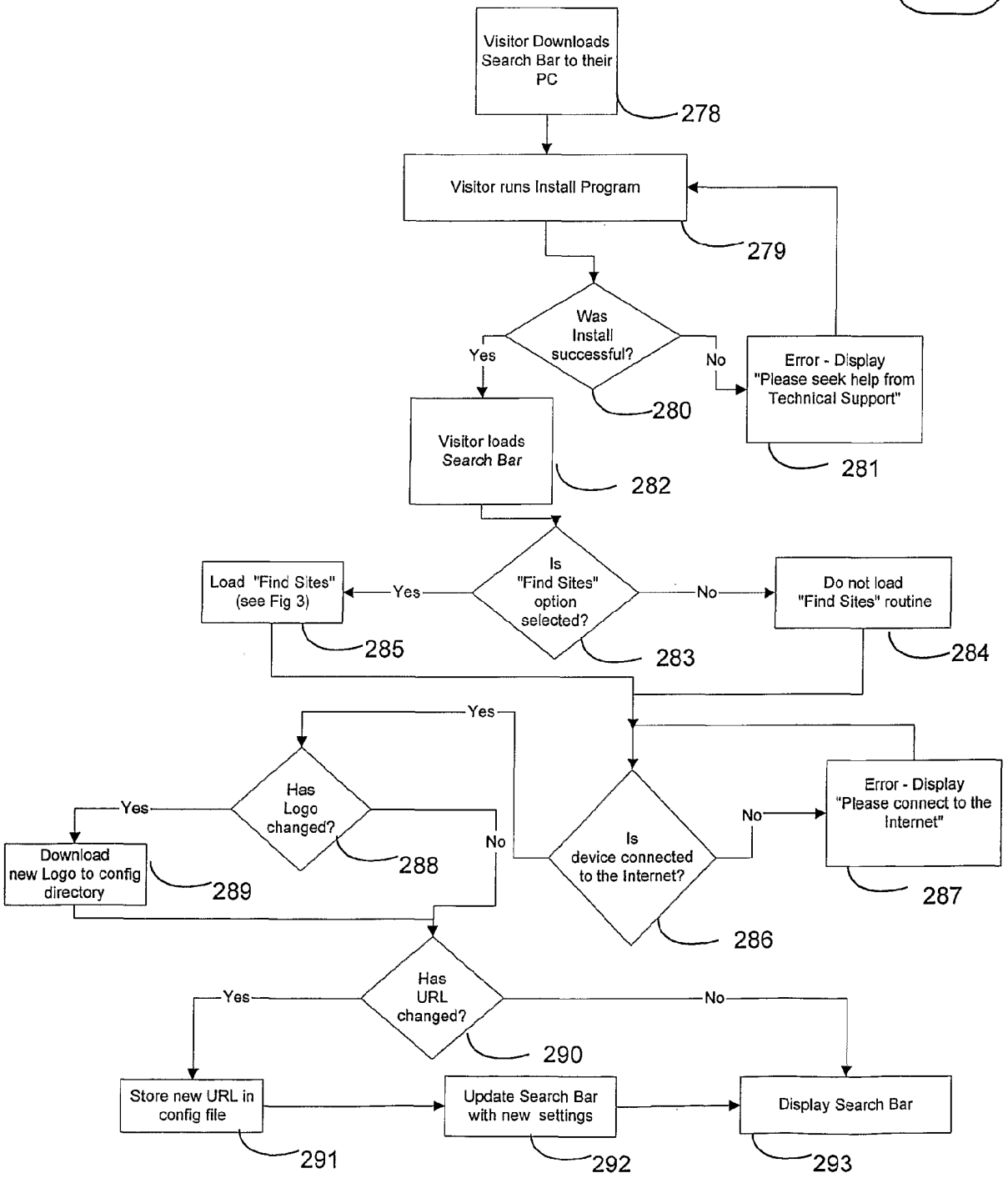
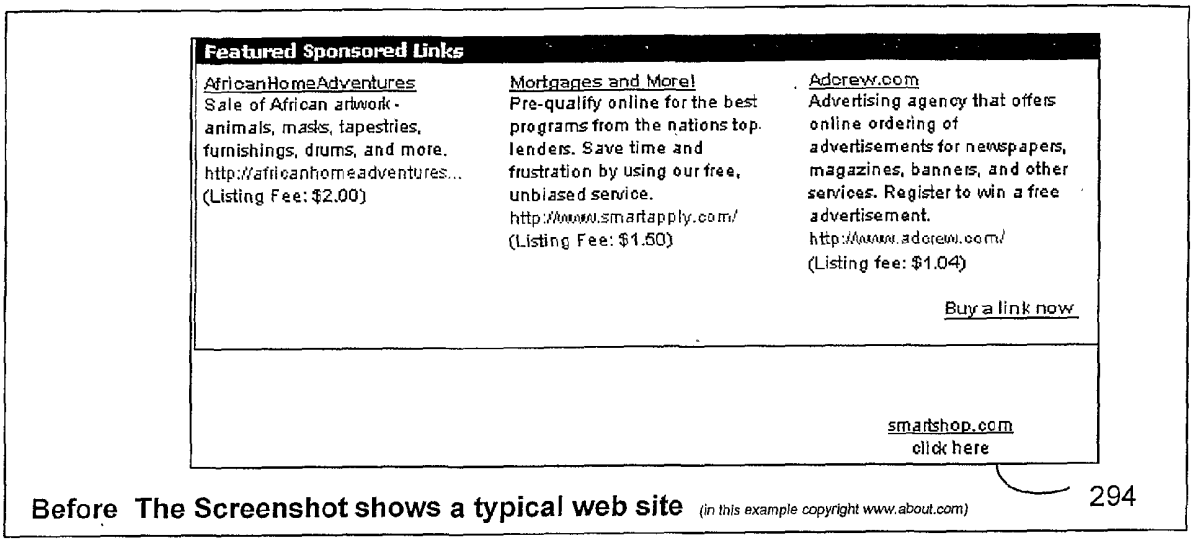
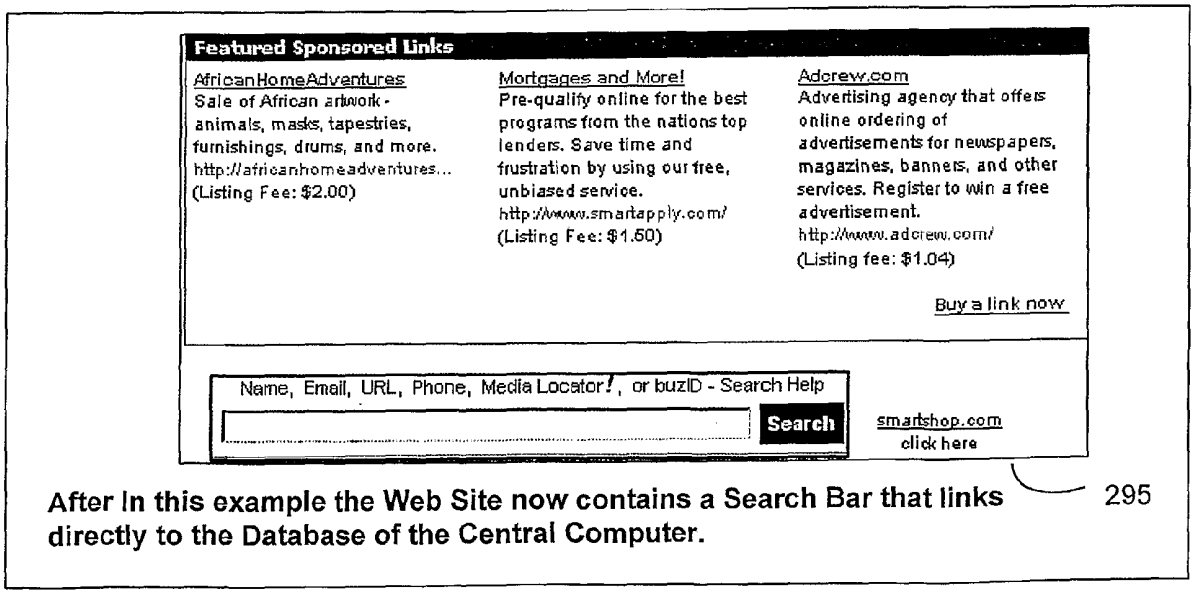

Visitor Downloads Search Bar to their PC
278
Visitor runs Install Program
279
Was Install successful?
280
Yes
No
Error - Display "Please seek help from Technical Support"
281
Visitor loads Search Bar
282
Is "Find Sites" option selected?
283
Yes
No
Load "Find Sites" (see Fig 3)
285
Do not load "Find Sites" routine
284
Yes
Has Logo changed?
288
Yes
No
Download new Logo to config directory
289
Is device connected to the Internet?
286
No
Error - Display "Please connect to the Internet"
287
Has URL changed?
290
Yes
No
Store new URL in config file
291
Update Search Bar with new settings
292
Display Search Bar
293

Fig 13g

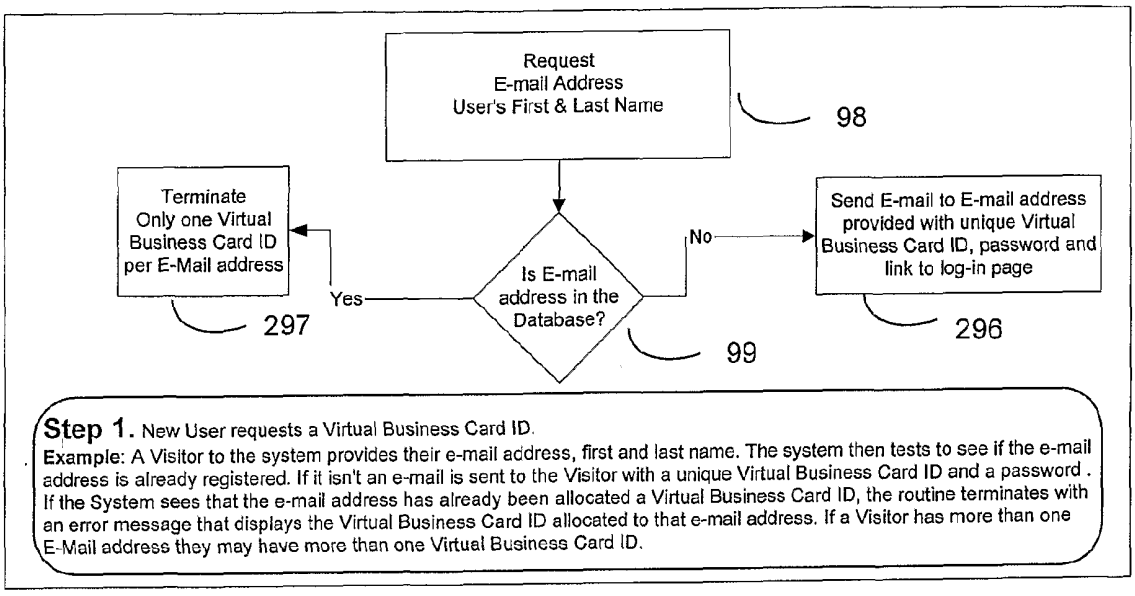


Before **The Screenshot shows a typical web site** *(in this example copyright www.about.com)*

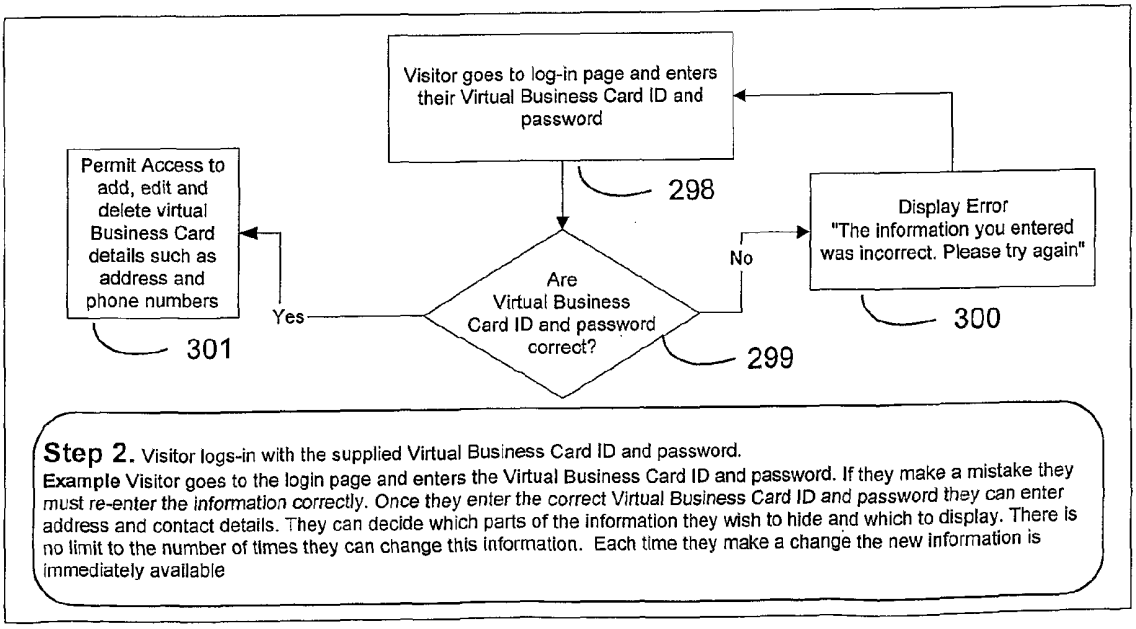


After In this example the Web Site now contains a Search Bar that links directly to the Database of the Central Computer.

Fig 14a

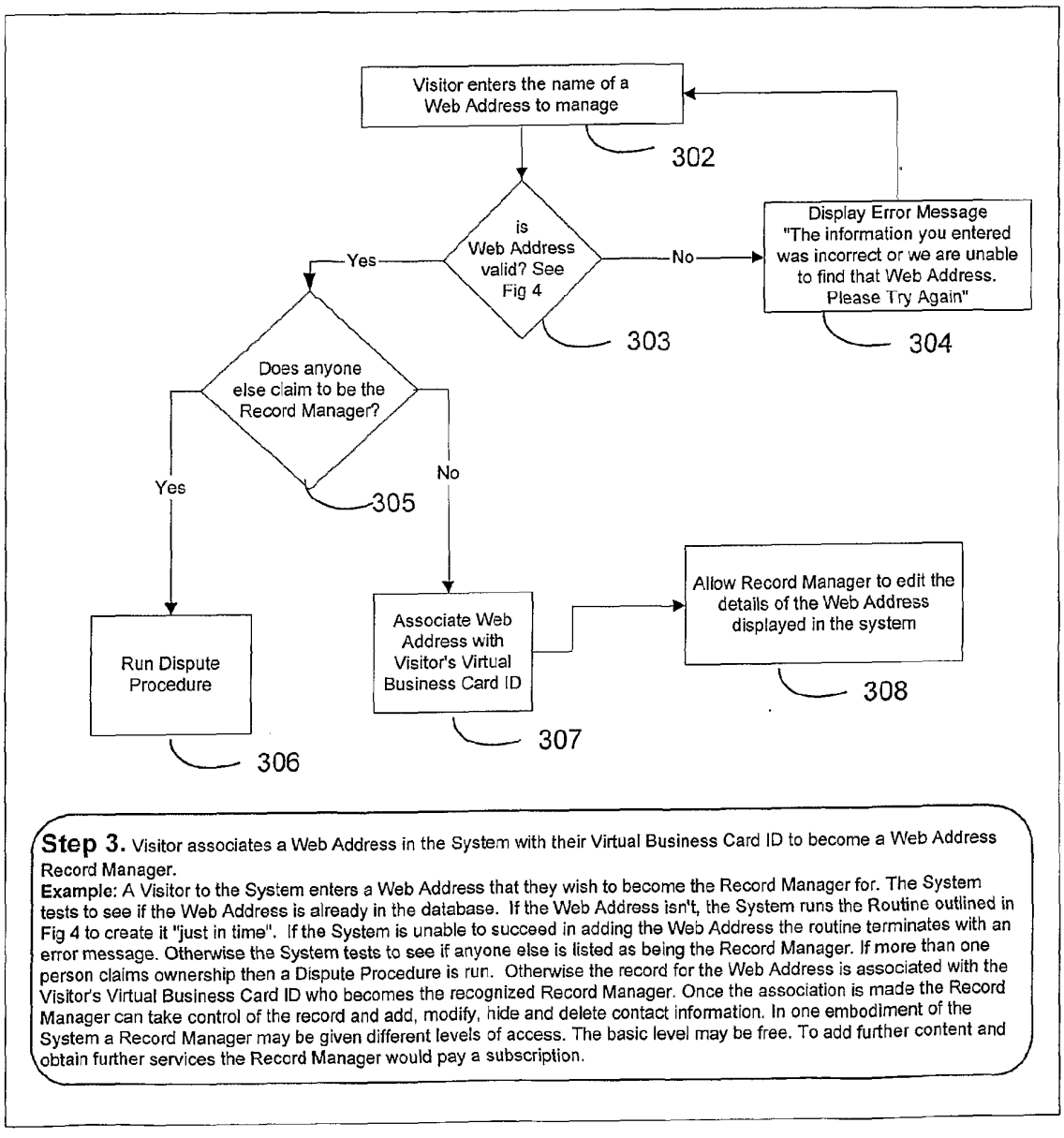


Step 1. New User requests a Virtual Business Card ID.
Example: A Visitor to the system provides their e-mail address, first and last name. The system then tests to see if the e-mail address is already registered. If it isn't an e-mail is sent to the Visitor with a unique Virtual Business Card ID and a password . If the System sees that the e-mail address has already been allocated a Virtual Business Card ID, the routine terminates with an error message that displays the Virtual Business Card ID allocated to that e-mail address. If a Visitor has more than one E-Mail address they may have more than one Virtual Business Card ID.



Step 2. Visitor logs-in with the supplied Virtual Business Card ID and password.
Example Visitor goes to the login page and enters the Virtual Business Card ID and password. If they make a mistake they must re-enter the information correctly. Once they enter the correct Virtual Business Card ID and password they can enter address and contact details. They can decide which parts of the information they wish to hide and which to display. There is no limit to the number of times they can change this information. Each time they make a change the new information is immediately available

Fig 14b



Step 3. Visitor associates a Web Address in the System with their Virtual Business Card ID to become a Web Address Record Manager.
Example: A Visitor to the System enters a Web Address that they wish to become the Record Manager for. The System tests to see if the Web Address is already in the database. If the Web Address isn't, the System runs the Routine outlined in Fig 4 to create it "just in time". If the System is unable to succeed in adding the Web Address the routine terminates with an error message. Otherwise the System tests to see if anyone else is listed as being the Record Manager. If more than one person claims ownership then a Dispute Procedure is run. Otherwise the record for the Web Address is associated with the Visitor's Virtual Business Card ID who becomes the recognized Record Manager. Once the association is made the Record Manager can take control of the record and add, modify, hide and delete contact information. In one embodiment of the System a Record Manager may be given different levels of access. The basic level may be free. To add further content and obtain further services the Record Manager would pay a subscription.

Fig 14c

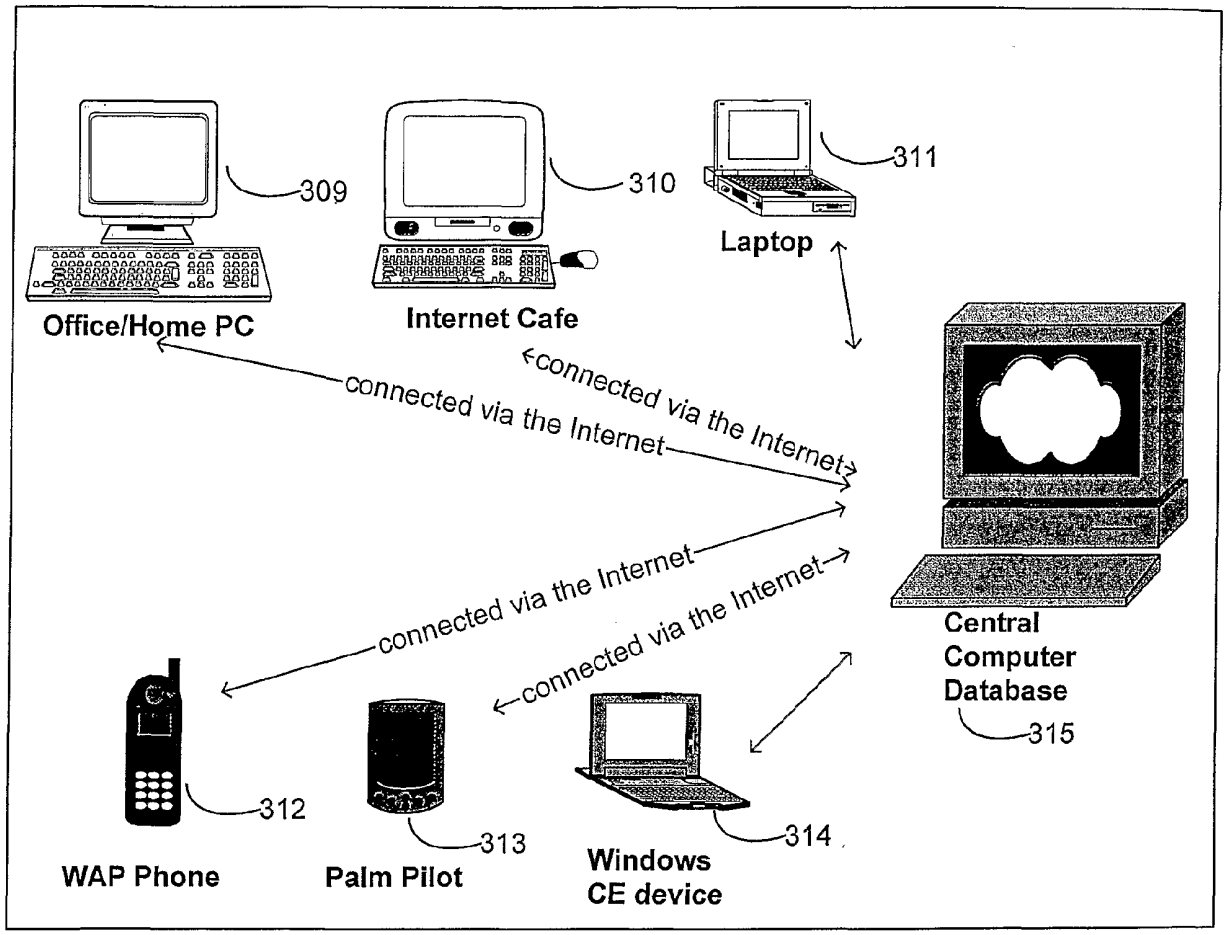
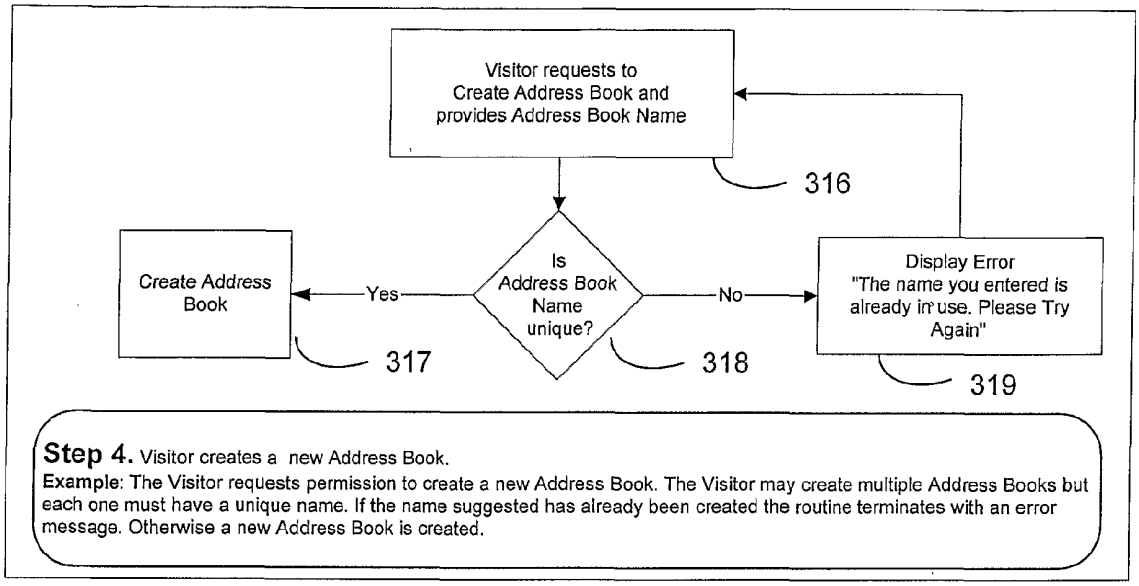

309
310
311
Laptop
Office/Home PC
Internet Cafe
connected via the Internet
connected via the Internet
connected via the Internet
connected via the Internet
Central
Computer
Database
315
312
313
314
WAP Phone
Palm Pilot
Windows
CE device

Fig 14d


Visitor requests to Create Address Book and provides Address Book Name
316
Is Address Book Name unique?
Yes
No
Create Address Book
317
318
Display Error "The name you entered is already in use. Please Try Again"
319
Step 4. Visitor creates a new Address Book.
Example: The Visitor requests permission to create a new Address Book. The Visitor may create multiple Address Books but each one must have a unique name. If the name suggested has already been created the routine terminates with an error message. Otherwise a new Address Book is created.

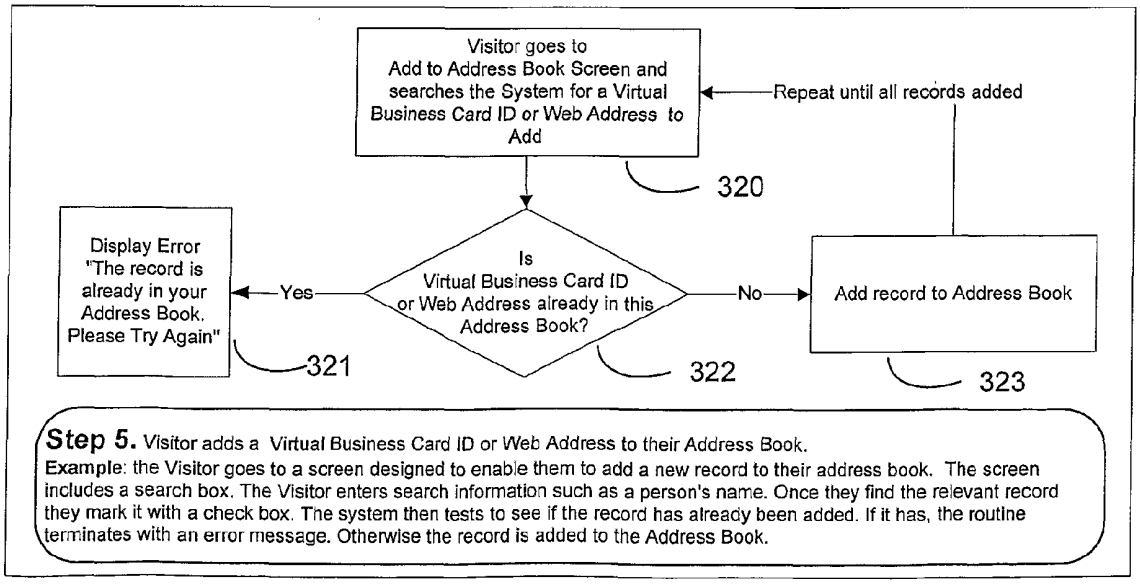
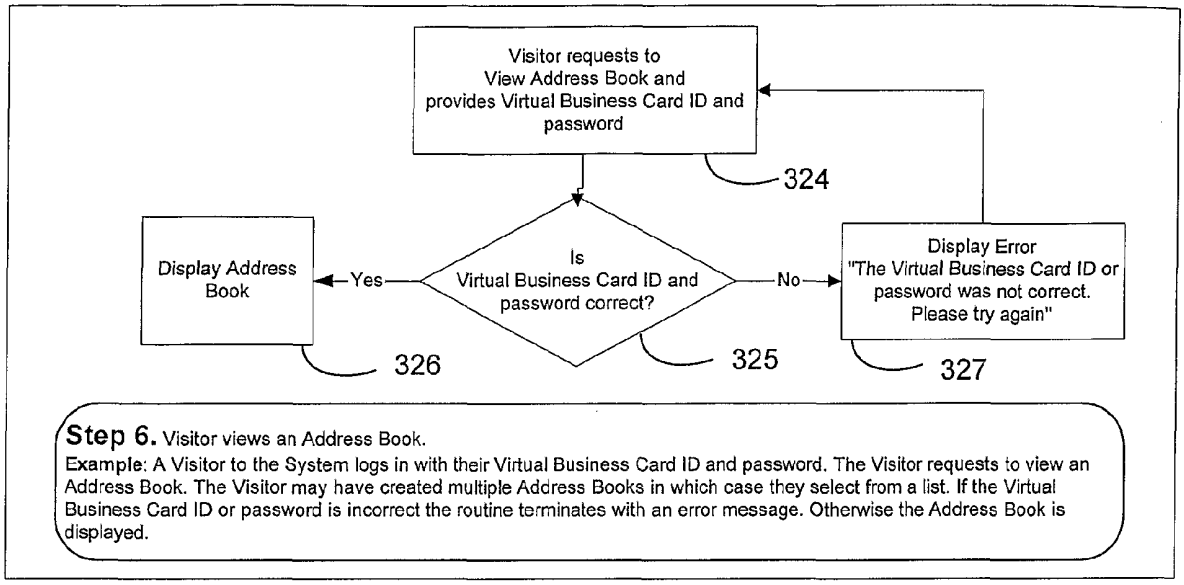
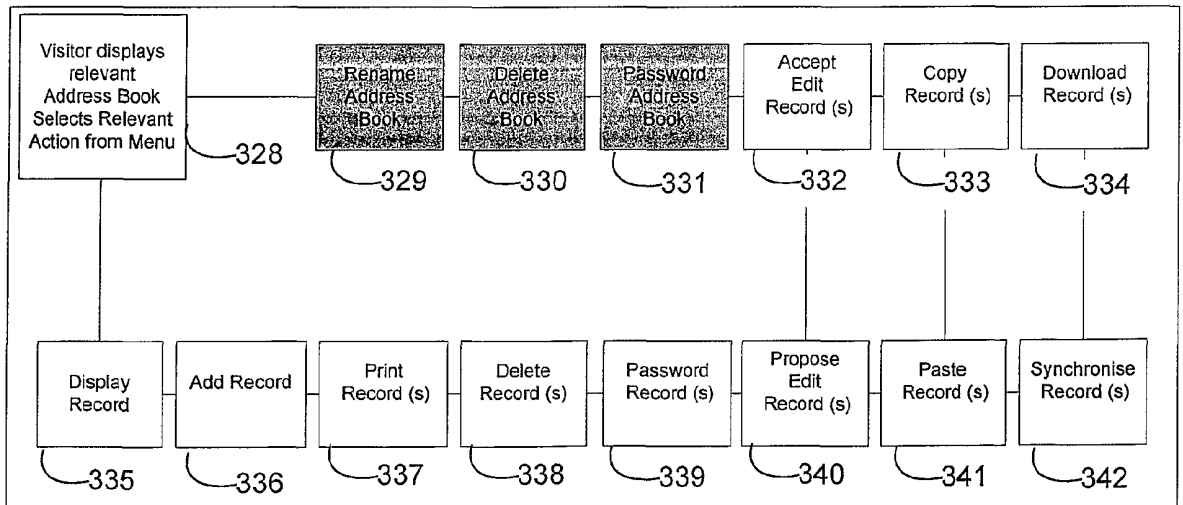

Visitor goes to Add to Address Book Screen and searches the System for a Virtual Business Card ID or Web Address to Add
Repeat until all records added
320
Is Virtual Business Card ID or Web Address already in this Address Book?
Yes
No
Display Error "The record is already in your Address Book. Please Try Again"
321
322
Add record to Address Book
323
Step 5. Visitor adds a Virtual Business Card ID or Web Address to their Address Book.
Example: the Visitor goes to a screen designed to enable them to add a new record to their address book. The screen includes a search box. The Visitor enters search information such as a person's name. Once they find the relevant record they mark it with a check box. The system then tests to see if the record has already been added. If it has, the routine terminates with an error message. Otherwise the record is added to the Address Book.

Fig 14e



Step 6. Visitor views an Address Book.
Example: A Visitor to the System logs in with their Virtual Business Card ID and password. The Visitor requests to view an Address Book. The Visitor may have created multiple Address Books in which case they select from a list. If the Virtual Business Card ID or password is incorrect the routine terminates with an error message. Otherwise the Address Book is displayed.

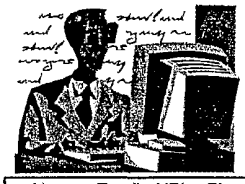


Step 7. Visitor manages/amends an Address Book.
Example: Once an Address Book is open the Visitor is able to display a specific record. The Visitor can also Add new records. The Visitor may also Print Record(s). The Visitor may also Delete Record(s). The Visitor may also Copy and Paste Record(s) from one Address Book to another. The Visitor may also Download the Address Book to a device such as a Computer so that it may be viewed while off-line. The Visitor may also Synchronize the Address Book with other popular Address Book programs such as Microsoft Outlook or Palm Address Book. The Visitor may not edit a record as a Record Manager does this. However if the Visitor discovers a mistake in a Record the System enables him to e-mail the relevant Record Manager with a Proposed Edit. In turn the Visitor may accept edit changes proposed by other Visitors. The Visitor may choose to add additional password protection to the Address Book or individual Record(s). Finally the Visitor may Rename or Delete an Address Book.

Fig 15

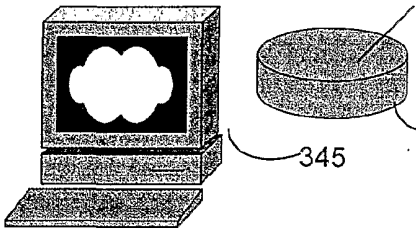
343

Step1 Visitor reads an article in a Hebrew newspaper which includes a Web Address in Hebrew



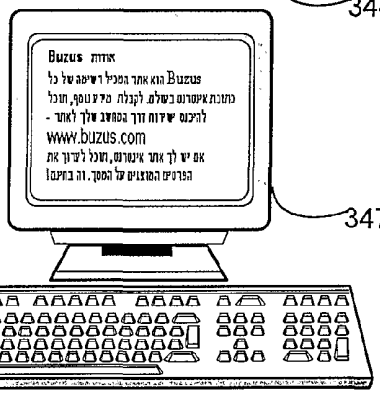
Step 2 Visitor types in the Hebrew Web Address in the Search Box

344



345

346



347

Step 3 Central Computer matches Hebrew Web Address with real English URL and forwards visitor to Web Site. A counter updates so the Record Manager sees how many visitors use the Service

Step 4 Relevant Hebrew Web Site Displays

Fig 16

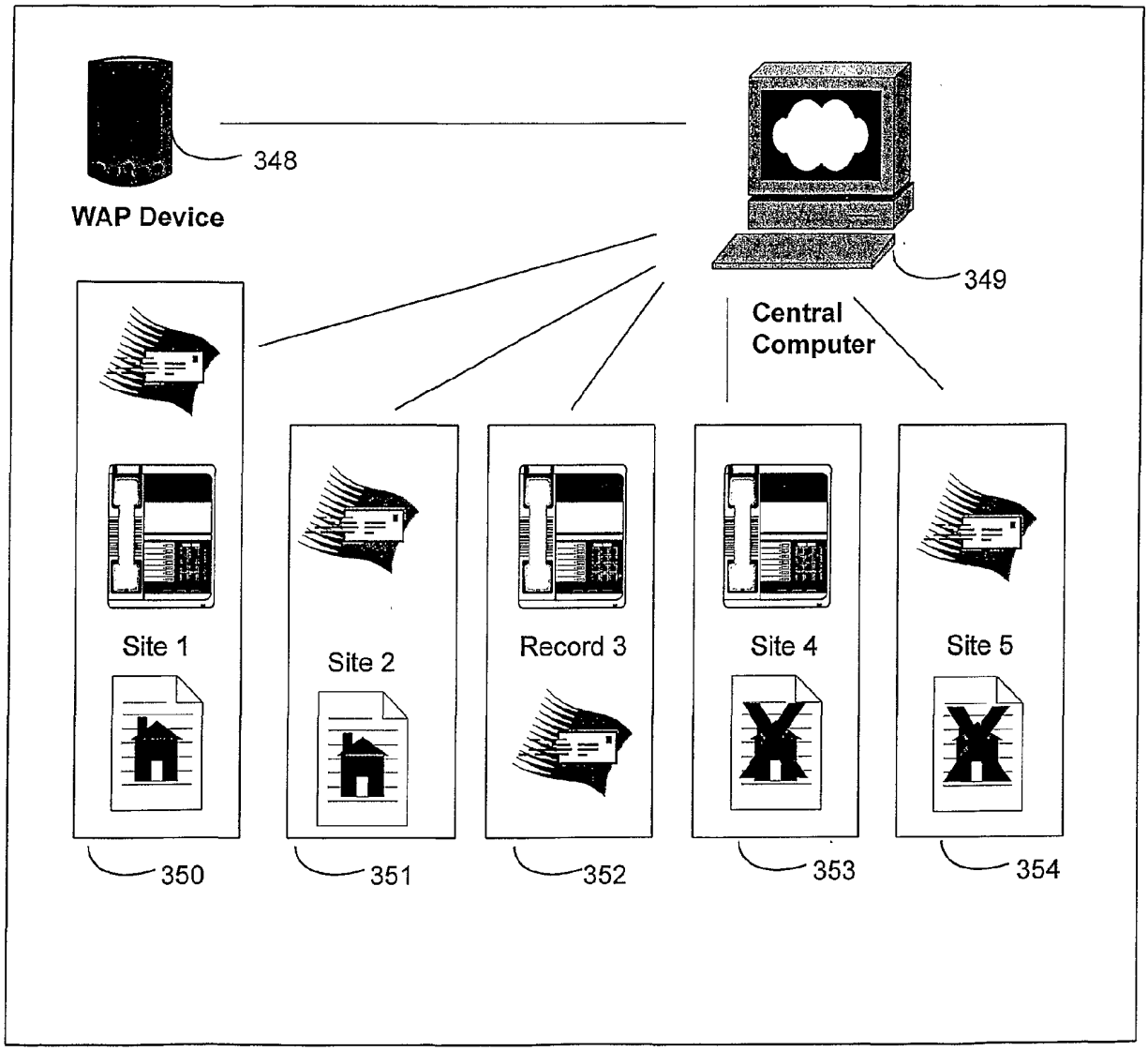
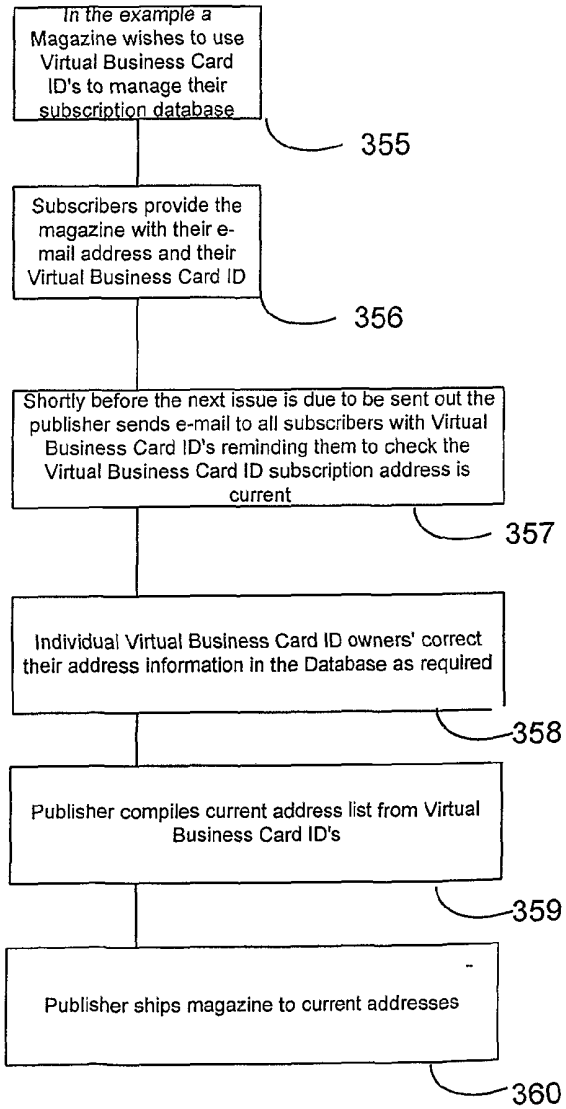

348
WAP Device
349
Central Computer
Site 1
Site 2
Record 3
Site 4
Site 5
350
351
352
353
354

Fig 17


In the example a Magazine wishes to use Virtual Business Card ID's to manage their subscription database
355
Subscribers provide the magazine with their e-mail address and their Virtual Business Card ID
356
Shortly before the next issue is due to be sent out the publisher sends e-mail to all subscribers with Virtual Business Card ID's reminding them to check the Virtual Business Card ID subscription address is current
357
Individual Virtual Business Card ID owners' correct their address information in the Database as required
358
Publisher compiles current address list from Virtual Business Card ID's
359
Publisher ships magazine to current addresses
360

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US01/31233

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :G06F 15/16, 15/173, 3/00, 13/14
US CL : 709/203, 218, 224; 345/333; 710/36
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)

U.S. : 709/203, 218, 224; 345/333; 710/36

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)

East search
Key terms: web site, domain names, IP address, URL, database, shared resources, request resources, redirection, load balancing.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,006,252 A (WOLFE) 21 December 1999, abtract, figures 2, 5, 7, 9, 11, 13, 33, 40, col. 4 lines 8-47, col. 6 lines 60-col. 7 lines 65, col. 9 lines 20-col. 10 lines 41, col. 12 lines 10-63, col. 14 lines 15-67, col. 19 lines 10-65, col. 24 lines 8-col. 25 lines 26 lines 27.	1-15
X	US 5,978,842 A (NOBLE et al) 02 November 1999, abstract, figures 1-8, col. 2 lines 45-col. 3 lines 50, col. 7 lines 49-col. 8 lines 67, col. 12 lines 9-56, col. 13 lines 14-67.	1-15

[X] Further documents are listed in the continuation of Box C. [ ] See patent family annex.

*	Special categories of cited documents:	"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
"A"	document defining the general state of the art which is not considered to be of particular relevance	"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
"E"	earlier document published on or after the international filing date	"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
"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)	"&"	document member of the same patent family
"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		

Date of the actual completion of the international search 03 JANUARY 2002	Date of mailing of the international search report 29 JAN 2002
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer James R. Matthews AYAZ R. SHEIKH Telephone No. (703) 305-9648

Form PCT/ISA/210 (second sheet) (July 1998)*

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US01/31233

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,983,270 A (ABRAHAM et al) 09 November 1999, abstract, figures 1-2, 4, col. 2 lines 31-60, col. 6 lines 13-36, col. 8 lines 1-67, col. 9 lines 1-40, col. 12 lines 51-col. 14 lines 67, col. 16 lines 28-62.	1-15
X, P	US 6,151,643 A (CHENG et al) 21 november 2000, abstract, figures 1, 7, co. 2 lines 62-col. 5 lines 32, col. 9 lines 56-col. 12 lines 30.	1-15
X, P	US 6,278,448 B1 (BROWN et al) 21 August 2001, abstract, figures 3, 6, col. 2 lines 54-col. 3 lines 48, col. 6 lines 9-67, col. 10 lines 63-col. 11 lines 42.	1-15