Title: SYSTEMS AND METHODS FOR PROVIDING ARENA SEARCHES

Abstract: Methods and systems for evaluating intellectual property and for meeting deadlines are disclosed herein, including methods and systems (100) for large arena searching of prior art relevant to patents and prior uses relevant to trademarks, meeting deadlines, evaluating the value of a patent based on objectives criteria, rating lawfirms, rating a law firms, rating attorneys and rating the breadth of terms in a patent claim.
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BE, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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SYSTEMS AND METHODS FOR PROVIDING ARENA SEARCHES

CROSS REFERENCE TO RELATED APPLICATIONS

This application is based upon and claims priority to United States Patent Application No. 08/976,124 and to a United States Patent Application entitled SYSTEMS FOR PROVIDING LARGE ARENA SEARCHES, naming Cella, Vincent and Kelly as inventors, filed June 16, 1999. The entire disclosures of such patent applications and any other patent or publication mentioned herein are hereby incorporated by reference.

BACKGROUND OF THE INVENTION

1. Field of the Invention

This disclosure relates to the field of electronic commerce, and more particularly to tools, methods and systems for searching for items of information relevant to intellectual property and for evaluating items of intellectual property.

2. Description of the Related Art

Information is a key aspect of competitiveness in a wide range of commercial endeavors. Similarly, intellectual property, including patents, trademarks, copyrights, trade secrets and other property rights, has become increasingly important, both as an asset and as a threat, in the world economy. The number of patent applications and applications for registration of trademarks has increased dramatically in recent years, and intellectual property has become important in industries in which it was previously not emphasized, such as in banking, electronic commerce and computer software.
As the number of intellectual property items increases, so does the difficulty in assessing the relevance of intellectual property for a particular business. Intellectual property professionals, such as lawyers, paralegals, corporate managers, patent agents, technology specialists, consultants, are asked to answer a wide variety of questions related to intellectual property. For example, among many other questions, such professionals are asked: (i) whether a proposed product or business will infringe a patent or trademark right of a third party; (ii) whether a proposed mark or name is available for use or registration; (iii) whether a particular patent or trademark registration is valid; (iv) whether a particular product, service, mark or name infringes a patent or trademark; (v) what is the nature of patent protection in a particular industry; (vi) what is the patent position of a particular competitor; (vii) what are important patents within a particular industry, or within a particular portfolio of patents; and (viii) what is the value of a particular patent or trademark, or portfolio or patents or trademarks, whether as collateral for a loan, as assets to be acquired in an acquisition, or as threats to competitors. Answering each of these questions requires at least two major components. First, professionals need access to information that is relevant to the analysis, and second, professionals need judgment, skills and analytical tools for using the information. If either of these components is flawed, then the resulting analysis may also be flawed.

Existing intellectual property tools are subject to a number of limitations. First, information sources are limited. For example, any patent or printed publication anywhere in the world may serve as a reference relevant to the validity of a patent, and any use of a trademark anywhere in a particular jurisdiction may be relevant to the scope of rights of a trademark holder. However, current information sources do not
make available many of the resources that could be available. For example, not every library has a copy of every thesis, journal, or publication. Some references may be available only in a single, distant location from the party desiring the reference. Other information sources are available, but access to them is not convenient. Thus, while on-line search engines permit users to search some references over computer networks, most references are not available on-line, or, if available, can only be searched in a limited fashion, such as by abstracts, rather than by full-text. Moreover, full-text search engines have limited capabilities, as they rely on statistical techniques, key words, and the like that are subject to error and that do not allow searches based on meaning. Thus, methods and systems are needed to improve the quality of searches available on-line and to improve the availability of information through computer networks.

In other cases, the volume of available information is excessive. Under current practice, analysis of a patent or a trademark is a complex task, requiring substantial time and effort on the part of intellectual property professionals. In cases where a large number of references or items of intellectual property are to be analyzed, it is not unusual for a professional to spend dozens, or even hundreds, of hours assessing an intellectual property estate, such as in the case of due diligence for an acquisition, or issuance of a non-infringement, product clearance, or invalidity opinion. Current tools for assessing large amounts of data are quite limited. Certain relational database tools exist for linking patents according to the patents that are cited in their prosecution and depicting connections between the various patents. It is asserted by their providers that these tools assist in identifying core patents within industries or portfolios. However, these tools can require substantial skill in their use, and are limited in their
purpose and scalability. A need exists for simple, current tools for the intellectual property professional.

Of course, in some cases, there is both too much information, in terms of total volume, and not enough information, in terms of the absence of key items.

Another problem for intellectual property professionals is that information changes over time. Thus, advice that was relevant at a particular time may become inaccurate. Although providing caveats to the client may prevent a professional from having liability, the end result is that the client relies on outdated advice. Accordingly, systems and methods are needed to assist attorneys in providing ongoing advice in certain subject matter areas. Also, the intellectual property landscape in an industry can change upon registration of a trademark, issuance of a patent, introduction of a new product, service, or business, or other events. Accordingly, tools are needed to permit professionals to track developments that are relevant to their clients’ interests.

Another problem for intellectual property professionals is deadlines. In cases of patents and trademarks, deadlines exist that, if not met, can lead to abandonment of valuable property rights of clients. Many client decisions are deferred until the last possible time, in order to delay incurring expenses, or for other reasons. Accordingly, intellectual property professionals must often meet deadlines under intense time pressure. Current tools exist for helping professionals identify and track deadlines, obtain reminders, and the like. However, the current tools do not necessarily increase the ability of the professional to meet last minute deadlines of which the professional is
aware. Accordingly, a need exists for systems and methods that permit professionals to meet deadlines.

The advent of computer networks offers geographically distributed users unprecedented opportunities to interact with each other and to work together on content. One of the most widely accepted and heavily used networks is the Internet. The Internet is a global system of interconnected computer networks formed into a single world wide network. A user, through the Internet, can interactively transmit messages with users in different locations. Similarly, a user in one location can connect to files and libraries in other locations. Thus, the Internet provides versatile communications functions and acts like a universal library, providing electronic access to resources and information available from Internet sites throughout the world. Access to the Internet can be had from a wide range of locations and through a wide range of devices. For example, a user with a laptop computer and a modem may connect to the Internet through a telephone jack. Wireless Internet connections are also available. The Internet offers the possibility to enable users to have access to a suite of improved intellectual property tools.

SUMMARY

Systems and methods are provided herein for enabling individuals to obtain improved answers to a variety of questions relevant to intellectual property, including: (i) whether a proposed product or business will infringe a patent or trademark right of a third party; (ii) whether a proposed mark or name is available for use or registration; (iii) whether a particular patent or trademark registration is valid; (iv) whether a particular product, service, mark or name infringes a patent or trademark; (v) what is
the nature of patent protection in a particular industry; (v) what is the patent position of a particular competitor; (vii) what are important patents within a particular industry, or within a particular portfolio of patents; and (viii) what is the value of a particular patent or trademark, or portfolio or patents or trademarks, whether as collateral for a loan, as assets to be acquired in an acquisition, or as threats to competitors.

Systems and methods are provided herein to provide professionals with access to information that is relevant to analysis of intellectual property and to provide those individuals with analytical tools for assisting in the evaluation of the information.

Methods and systems are also provided herein to improve the quality of searches available on-line and to improve the availability of information through computer networks.

Also provided herein is a suite of simple, convenient tools for the intellectual property professional.

Systems and methods are also provided herein to assist intellectual property professionals in providing ongoing advice in certain subject matter areas and to track developments that are relevant to their interests.

Also provided herein are systems and methods that assist professionals in meeting deadlines.

As used herein "database" should be understood to encompass any of a variety of computer software, computer hardware, firmware and other products capable of
storing data records, such as products provided by Oracle and others, including relational and object-oriented databases.

As used herein, "server" should be understood to encompass any device or method capable of interacting with a client or plurality of clients or similar devices or supporting a network computing environment or providing access to computing services, including hardware servers, software servers, web servers, HTTP servers, and any other available type of server.

As used herein, "network" should be understood to include the Internet, worldwide web, wide area networks, local area networks, Intranets, Extranets, telephone networks, cellular networks, and other connections capable of supporting communications, file transfers, and other functions over distance.

Accordingly, it is an object of the invention to provide improved methods and apparatus for searching for information relevant to intellectual property. In embodiments, the item may be prior art relevant to a patent, scientific and technical information, information relevant to use of a name or mark in commerce, information relevant to use of a trade secret, and other similar information.

In one embodiment the methods and systems disclosed herein provide an online platform for electronic commerce in which a requester of intellectual property information, goods or services identifies a sought-after item, identifies a bounty for a participant who finds the information, goods or services and identifies the conditions aiming the bounty. Participants in the methods and systems disclosed herein may
then visit a site of an administrator or host to view search requests submitted by requesters to determine whether a bounty is offered for particular goods, information, or services known to the participants. Participants can claim bounties by meeting the conditions established by the requesters, such as by providing the best response to a request for particular information, goods or services. Thus, the systems and methods disclosed herein can extend the reach of computer network-based searches to intellectual property information that is not connected to or readily available through the network. Moreover, by establishing a generalized electronic commerce marketplace for intellectual property information, goods or services, systems and methods disclosed herein greatly enhance the likelihood of a search requester finding a relevant response to a particular query.

It should be understood that systems and methods described herein, while particularly advantageous for finding information, goods and services that are not readily accessible through conventional search engines or through conventional electronic commerce sites, may also be used to find and obtain conventional goods and services as well.

Other objects, embodiments and features of the invention and the manner of obtaining them will become apparent to those skilled in the art, and the invention itself will be best understood by reference to the following detailed description read in conjunction with the accompanied drawings.

The systems and methods of the invention draw on the distributed knowledge of the general population, and experts and other individuals within that population, to
find specific information. In an embodiment, the information comprises references that are relevant to the patentability or validity of an invention. To that end, systems and methods are provided that, *inter alia*, post HTML pages on a web site, to allow the general population to view detailed information about information, goods, services, or other items, that, if available, would satisfy an inquiry of a user. In an embodiment, the information is information relevant to the patentability or validity of an invention, the validity or scope of rights of a trademark, or relevant to a trade secret or other intellectual property right.

In one aspect, the invention is understood as methods for administering a search request distributed to a large arena of participants. The method can include the steps of providing a server for generating a page signal having information that is representative of a characteristic of an item to be identified by a participant in the search request. In another aspect, the invention may optionally include methods for establishing a prize, award, or bounty associated with a successful response to the search request. In another aspect, the invention may optionally include a step of establishing conditions for obtaining the bounty, award, or prize. In another step, the method may allow each participant to employ a client process operating on a client station to connect to the server through a computer network and to download the page signal from the server that provides the characteristic of the information of the item being identified. Each participant can submit an answer to an administrative body or host that is supervising the administration of the search, wherein the answer is representative of an item that has been identified by a respective participant as having the characteristics set forth in the page signal. Optionally, the system may provide a mechanism for the participant in the search to provide access to a file, message, library.
database, other source of information to the search requester, which may be on-line access or other access.

The administrative body or host can generate a database that contains information which is representative of each of the answer signals submitted by each participant in the contest. Optionally, the participants can be provided access to a search engine that will search a database containing descriptive references of each of the answers previously submitted by the participants in a particular contest. The search engine can provide a statement as to whether an item that a participant has identified has been earlier provided by another participant in the search. As the winner of the search can optionally be determined to be the first participant to identify the item being sought, a participant that subsequently identifies the same item can be made to understand that he or she cannot win the search by submitting the previously identified item, and, in order to win, must identify another item that includes the same characteristics. In alternative embodiments, the winner may be identified as the participant who identifies the "best" answer to a query, either as determined by the requesting party, by the administrative body, by objective or subjective standards, or at random. For example, the administrative body can review each of the submissions offered by the individual participants, and from the review, determine the winning participant, optionally rewarding the winning participant with a prize, such as a cash reward.

In an optional practice, the server that provides a page signal having information representative of a characteristic of a response to be identified can provide a plurality of such page signals wherein each of the page signals provides a description
in an altered language, thereby allowing the content to be played by an arena of participants that speak multiple languages. Optionally, the page signal can present the characteristics of the item being identified by employing text information, graphic information, video information, audio information, or any other information that is suitable for conveying information to a search participant.

Additionally, the page signals provided by the server can include information that is representative of clues for helping a participant more readily identify an item that includes the listed characteristics. For example, in a practice where the page signal is a hypertext markup language document, the page signal can include hypertext lengths to other sites on a network having information that is relevant to the participants search that is sought after item. Additionally, the page signal can include a control that allows the user to download a data file that has information that can be used by the participant as a clue during the participants search for the sought after item.

Optionally, the practices according to the invention can include the steps of directing the server to provide, responsive to the submission of an answer by a participant, a receipt signal that is representative of the registration of the answer signal within a database. The receipt signal can include a time stamp that provides the participant with a time entry for their submission. Accordingly, in a case of a race between two participants submitting the same item, that participant that made the earlier submission, as shown by the receipt, can claim earlier submission.
In practice of the invention, prizes are awarded as cash options, which, optionally, can be transmitted to the winning participant by an electronic check transfer. However, any suitable means for transmitting a prize to a participant can be employed by the present invention without departing from the scope thereof, and non-cash prizes, such as loyalty and incentive points, can be used.

In an optional practice, the methods of the invention can include the step of providing a page signal that has a plurality of category controls each being operative to direct a participant to a page having information representative of a characteristic of an item associated with the category. In this way, the server can provide multiple searches, allowing a participant to choose one or more searches to enter. If a participant likes a particular category, then in an optional practice the methods of the invention can provide notification to a participant that has requested to be notified in the event that a new search contest has been entered under a particular category. Therefore, a chemist could be notified each time a new search has begun to identify a chemistry reference.

In an optional practice, the server can be provided with a site blocker mechanism that allows the server to selectively control the availability of the page signal responsive to a signal provided by the participant. For example, the server can employ cookies to identify the computer network from which a participant is accessing the server. In this way, the server can selectively block those participants that are not allowed to play in a particular search. For example, the server can choose to block computer networks that are associated with professional organizations. In this way, the search can be marginally limited to amateur participants. Similarly, the server
could block networks for specifically identified organizations, such as the current organization of an individual participating in a job hunt.

In another aspect, the invention is to be understood as a development kit that allows the user to generate a markup language page signal which is suitable for being employed by the server as a page signal that represents a new search contest to a large arena of participants. The development kit can be a computer program that the user can use to develop a WEB page that describes an item the user wishes to identify, and which can be readily uploaded to the search server. In one embodiment, the development kit comprises a page generation mechanism that provides a page signal form to the user. The kit can further include a control for allowing the user to include within the page signal form a text signal which is representative of a set of characteristics of the item to be identified by the participants in the search contest, and a control for allowing the user to include within the page signal form a set of predetermined page links for linking one or more of a set of known pages which are controlled by the search server.

Optionally, the development kit can include an automatic control for allowing a time of posting date field to be included within the page signal form, wherein the time of posting field contains a signal that is representative of the time of uploading event by the user to the search server. The server can store his time of posting signal to control how long the page signal will be presented to participants for being timed-out and removed from the server. Additionally, the development kit can include a site blocking control for allowing the user to identify at least one computer network site and for generating an instruction to a server for directing the server to prevent
network. This allows the user to restrict the computer networks, and therefore some of the participants that can see that a search contest has begun for a particular item. Similarly, the development kit may include a push site control mechanism for allowing the user to specify at least one computer site to which the respective markup language can be pushed. In this way, the user can selectively target those participants that have specifically requested to be alerted each time a search contest begins in one or more categories.

Optionally, an individual establishing a search request may establish conditions for satisfying the request. For example, the user might agree to provide a bounty to the first provider of a relevant reference in a patent or trademark situation. The user might optionally provide a bounty to the best identified reference, as judged by the user. The user may guarantee to provide a bounty to some participant, or may agree to provide a bounty only if preconditions are met. The host may optionally administer the decision as to whether the conditions are met. The requester may set time limits on the desired responses.

The requester may optionally establish a bounty for meeting the search conditions. As used herein, except as context dictates otherwise, the terms “bounty,” “award,” and “prize” should be understood as encompassing any consideration of any kind whatsoever that a requester might offer in exchange for finding specialized information. Thus, these terms may, in embodiments, include cash awards, discounts, coupons, incentive programs, loyalty points, goods, services, points, and the like. The amount of a bounty may vary widely, depending on the value of the information,
goods, services, or other items sought. In systems and methods disclosed herein, the
bounty may be predetermined by the requester, or it may be negotiated later by the
parties.

The invention may optionally include steps of establishing a network of
participants who participate in attempts to answer search requests. The participants
may be individuals who have specialized knowledge. Optionally, the host may keep
track of participants who respond to search request and contact them when new search
requests, or search requests of particular types, are entered into the system. Thus, the
invention, by encouraging participants to answer queries, may help establish a
worldwide network of participants who have specialized knowledge relevant to
searchers. Thus, the invention may be viewed, in one aspect, as a method of electronic
commerce for establishing a generalized market for intellectual property information,
goods, services and other items that are not readily accessible through the Internet
using conventional search engines or experts. It may be recognized that the
generalized market may have enhanced value if a wide range of different search
requests are supported in an organized fashion. The likelihood of a successful
exchange of information is increased by the establishment of a large flow of
participants who are aware that visiting the host site offers the opportunity to collect
bounties in exchange for revealing intellectual property information readily accessible
by the search participants. Specifically, the presence of a large number of search
participants in the systems and methods on a regular basis increases the likelihood that
an item will be provided, and a bounty collected, for a particular search request. Thus,
an optional aspect of the systems and methods disclosed herein is the establishment of
search categories that make it convenient for participants to identify search requests to
which they may have responses. Optionally, some consideration may be awarded to participants for visiting the site on a regular basis, thus establishing a high likelihood of successful exchanges.

Optionally, the systems and methods disclosed herein may further include establishing a database of requests and responses to requests that are made in accordance with the methods and systems disclosed herein. Thus, data may be collected about a wide range of topics and stored in a database to assist in on-line searching of the data. Data about search requests can be stored and accessed as a way of identifying desires, needs and tastes of requesters. Thus, advertising for products and services can be targeted to the population of requesters as a whole, or to particular subsets of requesters, according to those desires, needs and tastes.

BRIEF DESCRIPTION OF THE FIGURES

Fig. 1 depicts a schematic of the entities involved in an embodiment of a methods and systems disclosed herein.

Fig. 2 depicts a host system of an embodiment of the methods and systems disclosed herein.

Fig. 3 depicts a requester computer in an embodiment of the methods and systems disclosed herein, including a graphical user interface thereof.

Fig. 4 depicts a system for large arena intellectual property searching in accordance with an embodiment hereof.
Fig. 6 depicts a flow chart setting forth steps for a process for large arena searching in accordance with an embodiment hereof.

Fig. 7 depicts an example of a graphical user interface for a requester wishing to find a reference relevant to an item of intellectual property.

Fig. 8 depicts an example of a search request for a requester wishing to find a reference relevant to an item of intellectual property.

Fig. 9 depicts a flow chart for process steps in a method or large arena searching in accordance with an embodiment of the invention.

Fig. 10 illustrates the structure of a dynamic page generator in accordance with an embodiment of the invention.

Figs. 11 - 11C depict process steps for evaluating intellectual property in accordance with an embodiment disclosed herein.

Figs. 12 and 12A depict templates for entry of data relevant to valuation of a patent in accordance with an embodiment disclosed herein.

Fig. 13 depicts process steps for determining whether a patent has already been evaluated in accordance with an embodiment.
Fig. 14 depicts a database record for storing values relevant to valuation a patent using the process steps depicted in Figs. 11-11C.

Fig. 15 depicts process steps for determining term breadth in accordance with an embodiment disclosed herein.

Figs. 16 and 16A depict process steps for determining a law firm rating in accordance with an embodiment disclosed herein.

Fig. 16B depicts a database record for storing values associated with the process of Figs. 16 and 16A.

Fig. 16C depicts a template for entry of data relevant to the process steps of Figs. 16 and 16A.

Fig. 17 depicts a flow chart for assigning a value to a filing date.

Fig. 18 depicts a flow chart for assigning a value to a remaining portion of a patent term.

Fig. 19 depicts a flow chart for assigning a value to layers of protection of patent claims.
Fig. 10 depicts a flow chart for assigning a rating to a patent based on litigation frequency.

Fig. 21 depicts a flow chart for retrieving assignee information.

Fig. 22 depicts a flow chart for assigning a value to an assignee portfolio of inventions.

Fig. 23 depicts a flow chart for determining inventor information.

Fig. 24 depicts a flow chart for assigning a value to an inventor portfolio of inventions.

Fig. 25 depicts a flow chart for establishing patent value based on a plurality of factors.

Figs. 26 and 26A depict a flow chart for determining an attorney rating.

Fig. 26B depicts a database record for storing values relevant to an attorney rating.

Fig. 26C depicts a template for entering value relevant to an attorney rating.

Fig. 27 depicts flow chart for calculating a quality of reference score.
Figure 8 depicts a flow chart for determining the reputation success rate.

**DETAILED DESCRIPTION**

Certain systems and methods for providing expanded search capabilities to parties seeking to find references over computer networks were disclosed in co-pending United States Patent Application No. 08/976,124, the entire disclosure of which is incorporated by reference herein.

**HOST-PROVIDER-REQUESTER SYSTEM DESCRIPTION**

Referring to Fig. 1, the entities involved in an embodiment of a method and system disclosed herein are depicted in schematic format. In a system 100, a plurality of requesters 102, providers 108 and a host 104 are connected via a network 110. It should be understood that any number of requesters 102, hosts 104, and providers 108 could participate in such a system 100.

In an embodiment, the network 110 may be a wide area computer network, such as the Internet.

To further illustrate, an example of a client-server system interconnected through the Internet 100. In this example, a remote server system is interconnected through the Internet to a client system. The requester system 102 can include conventional components of a client system, such as a processor, memory (e.g. RAM), a bus which couples the processor and memory, a mass storage device (e.g. a magnetic hard disk or an optical storage disk) coupled to the processor and memory through an I/O controller and a network interface, such as a conventional modem. The server
system can include conventional components such as a processor, memory (e.g. RAM), a bus which couples the processor and memory, a mass storage device (e.g. a magnetic or optical disk) coupled to the processor and memory through an I/O controller and a network interface, such as a conventional modem. It will be appreciated from the description below that the present invention may be implemented in software which is stored as executable instructions on a computer-readable medium on the client and server systems, such as mass storage devices, or in memories.

In an exemplary embodiment, a browser, residing on the computer of requester 102, displays a home page retrieved from the World Wide Web on a viewing device, e.g., a screen. A user can view this page by entering, or selecting a link to, a Universal Resource Locator (URL), such as "www.optionbid.com", in a browser program, such as Microsoft Explorer or Netscape Navigator, executing on the requester's computer. Note that the subject online system 100 may reside in a server or in a combination of servers.

Focusing now on the network 110, the presently preferred network is the Internet. The structure of the Internet is well known to those of ordinary skill in the art and includes a network backbone with networks branching from the backbone. These branches, in turn, have networks branching from them, and so on. For a more detailed description of the structure and operation of the Internet, please refer to "The Internet Complete Reference," by Harley Hahn and Rick Stout, published by McGraw-Hill, 1994. However, one may practice the present invention on a wide variety of communication networks. For example, the network 104 can include interactive television networks, telephone networks, wireless data transmission systems, two-way
In addition, the network 110 can include online service providers, such as Microsoft Network, America OnLine, Prodigy and CompuServe. In a preferred embodiment, the online service provider is a computer system which provides Internet access to a requester 102. Of course, the online service providers are optional, and in some cases, the requesters 102 may have direct access to the Internet.

In its present deployment, the network consists of a worldwide computer network that communicates using well defined protocol known as the Internet Protocol (IP). Computer systems that are directly connected to the Internet each have a unique Internet address. An Internet address consists of four numbers where each number is less than 256. The four numbers of an Internet address are commonly written out separated by periods such as 192.101.0.3. To simplify Internet addressing, the "Domain Name System" was created. The domain name system allows users to access Internet resources with a simpler alphanumeric naming system. An Internet Domain name consists of a series of alphanumeric names separated by periods. For example, the name "www.expertquest.com" corresponds to an Internet address. When a domain name is used, the computer accesses a "Domain Name Server" to obtain the explicit four number Internet address.

To further define the addresses of resources on the Internet, the Uniform Resource Locator system was created. A Uniform Resource Locator (URL) is a
descriptor that specifically defines a type of Internet resource and have the following format:

resource-type://domain.address/path-name

where "resource-type" defines the type of Internet resource. Web documents are identified by the resource type "http" which indicates that the hypertext transfer protocol should be used to access the document. Other resource types include "ftp" (file transmission protocol) and "telnet". The "domain.address" defines the domain name address of the computer that the resource is located on. Finally, the "path-name" defines a directory path within the file system of the server that identifies the resource.

To access an initial Web document, the user enters the URL for a Web document into a Web browser program. The Web browser then sends an http request to the server that has the Web document using the URL. The Web server responds to the http request by sending the requested HTTP object to the client. In most cases, the HTTP object is an plain text (ASCII) document containing text (in ASCII) that is written in HyperText Markup Language (HTML). The HTML document usually contains hyperlinks to other Web documents. The Web browser displays the HTML document on the screen for the user and the hyperlinks to other Web documents are emphasized in some fashion such that the user can selected the hyperlink.

Focusing now on the requester 102, the requester system may be a general purpose computer. In a preferred embodiment, the requester 102 is equipped with a conventional personal computer equipped with an operating system supporting Internet communication protocols, such as Microsoft Windows 95 and Microsoft Windows NT, a browser, such as Microsoft Explorer or Netscape Navigator, to access
the preserver and a modem, wireless connectivity such as infrared link or satellite dish) or other mechanism for access to the network 110. In other embodiments, the requester 102 could, for example, be a computer workstation, a local area network of computers, an interactive television, an interactive kiosk, a personal digital assistant, an interactive wireless communications device or the like which can interact with the network. While the operating systems may differ in such systems, they will continue to provide the appropriate communications protocols needed to establish communication links with the network 110.

Referring to Fig. 2, the host 104 may include a server 112 which communicates with one or more databases 114. The server 112 may be an HTTP server or other server capable of a communication connection, such as a connection to the Internet. In such embodiments, the server 112 can include a dynamic page generator, HTML structures, a database module, an action manager, and an order processing module having an order engine, an order pipeline, and components for various purposes, such as calculating sales tax and shipping/handling fees. The dynamic page generator can use, e.g., HTML structures and communicates with the database module to access data from the database(s) to format and display on the requester’s browser. The order processing module communicates with the dynamic page generator and the database module to create Web pages having product information, e.g., ticket option data, for display on a requester 102. Similarly, the order processing module communicates with the auction manager and the database module as needed to execute purchasing transactions for the ticket options. Lastly, the order processing module can include various components, that is, a plurality of application programs to enhance and administer the system. For example, the components can include applications to
interface to commercial banking systems, to calculate shipping/handling, to determine applicable taxes and to post payments to various bank accounts.

The server 112 may include conventional computer components, such as an operating system 118, which may execute a variety of application programs 120. The server 112 may include memory 122 and a communications device 124, such as a modem or network interface card. The communications device 124 may provide a communications connection 128 for connection to the network 110 of Fig. 1. The host 104 may, in an embodiment, host a site on the Internet or other computer network. The host 104 may thus execute various conventional computing functions, such as data processing and file storage, manipulation and retrieval. The server 112 may access the database 114, which may be internal to the server 112 or may be a separate database. The database 114 may be at a remote location from the server 112 or may be at the same location as the server 112. In a preferred embodiment, the database(s) 114 comprises data stored locally in one or more storage devices, such as a magnetic disk drive or an optical disk drive. In another preferred embodiment, the database(s) 114 comprises data distributed across a local area network (LAN) or a wide area network (WAN). For example, the database 114 might be a third party database that is accessed by the server 112 through the network 110 or through another communications connection, such as a dedicated line. The database(s) 114 may include query data, ticket information, order information, requester information, receipts data and the like.

In an embodiment, the server 112 hosts a web site, in which case the server 112 could include application programs 120 capable of enabling a requester 102 to interact with the server 112 through a web browser or similar application, via the network 110.
In certain preferred embodiments, the system uses templates, directives and actions to dynamically respond to a requester's actions. Templates, which include directives and actions, can be located in the HTML structures. In response to browser requests, the dynamic page generator composes HTML pages dynamically from templates stored in the HTML structures. In a preferred embodiment, the requester invokes the dynamic page generator by selecting a URL. The system interprets the URL by analyzing its constituents to identify a template and its arguments. Thus, an "http://" portion of the URL specifies use of the HyperText Transfer Protocol (HTTP) for communication across the Internet.

A template defines the appearance of a page. Templates include HTML and directives, which are keywords to the dynamic page generator specifying how to build a page for display, such as what data to insert into the page and what queries to run against the database to obtain data for display on the page. A template may also include a wide variety of content, such as ActiveX controls, Visual Basic Scripts, forms, images, video and sound.

In a preferred embodiment, the system includes several predefined templates in the HTML structures. For example, a "welcome.html" page serves as a logon page for consumers. Similarly, a "register.html" page provides a form for a new consumer to enter registration information. An "update.html" page likewise provides a form for consumers to update their registration information. A "purchase.html" page presents the order total and provides a form for entry of credit card payment information. To confirm purchases, a "confirmed.html" page presents a message confirming completion.
of the transaction. Similarly, a "receipt.htm" page presents a summary of the order in the form of an online checkout receipt. In addition, a "detail.html" page presents a detailed line item receipt for options ordered.

To perform various system operations, the system uses actions. For example, actions can add an item to an order form, clear an order from, initiate a search request, define a search request, or search a database. An action is a routine to perform specific functions. Actions have return values that control the display of results to a requester 102 or other operator. Similarly, actions take arguments that control their behavior. Some actions generate errors when they receive incorrect arguments while other actions process and validate the arguments they receive. Many action arguments have default values to use when no values are specified. After execution of an action and its resulting system operation, the action may cause display of an HTML page having information, such as confirmation information or error information resulting from execution of the action, or the action may redirect the requester 102 to a new HTML page.

During a session, the requester 102 sends requests, e.g., embedded in URL addresses, to the system. The system responds to these embedded requests with HTML documents. The HTML documents may contain, for example, registration information, product offerings, promotional advertisements, orders, bids, requests, and receipts. The page generator composes the HTML documents sent to the requester 102. The system provides a set of HTML pages dynamically generated from queries to a database having store information, such as full-text of patents, previous search results, and the like.
Fig. 10 illustrates one embodiment of a dynamic page generator 304. In a preferred embodiment, the dynamic page generator 304 includes a page processor 308 and a query module 310. The page processor 304 retrieves and parses a template from the HTML structures 302 to form an HTML page for display on the browser 306, e.g., of a user 102. In parsing the HTML template, the page processor 308 communicates with the query module 310 as needed to extract and format information from the database(s) 312 to display on the browser 306. For example, the template can provide a query, such as the name of a team or other contingency event, a bid price for a specified option, or the like, to the query module 310. The query module 310 then passes this query to the database module 312. In the instance where the query is a participant name or contingent event name, the database module 312 uses the query to retrieve information related to query from associated databases 314 and then passes that query to the database module 312 for execution. In embodiments wherein the query is a bid for a specified option, the database module 312 retrieves from associated databases 314 (such as an option bid database) information related to other bids for the specified option, and then passes that information to the database module 312 for execution. In that embodiment, the database module 312, or other sub-system of the present system, can compare the queried option bid to returned data from the option bid database to determine if the bid should be accepted. In a preferred embodiment, the database 314 is a relational database that processes queries in the SQL data sublanguage. The database 314 in turn executes the query and returns the query results to the database module 312 to produce an access object having the query results. The database module 312 returns the access object having the query results to the query module 310. The page processor 308 obtains the access object from the query module
310 and pre-processes the access object to extract and form the query data to prepare HTML for display on the browser 306.

The present system may also include a financial transaction settlement sub-system. The financial transaction settlement sub-system processes various modes of payment for accepted contingent event options, or for goods, services, or other items purchased after emergence of a contingency event, e.g., including processing credit card authorization requests, debit card purchase requests, electronic money ("e-money") requests, or other such financial transaction request. For example, the financial transaction settlement sub-system may represent commercially available credit card processing institutions.

Referring to Fig. 3, in an embodiment, the server 112 hosts a web site that enables requesters 102 to interact with various processes of the host 104 in accordance with embodiments disclosed herein. The requester computer 154 may include a graphical user interface 130, which may include a template 131 or similar input process for completion by the requester. Through templates or other typical input devices, the requester device may interact with the host 104, to accomplish the various processes disclosed herein, such as large arena searching for references relevant to intellectual property, evaluation of patents, rating of patent attorneys and law firms, meeting deadlines, and others. Requesters 102 may interact with the site via a requester device 154, which may be any device capable of an Internet connection, such as a personal or laptop computer running a web browser application, such as Netscape Navigator, Microsoft Explorer, or the like. The requester device 154 may include a graphical user interface 130, which appears on the screen of the requester device 154 and through
which the 

requester 102 may interact with the site. In the embodiment, the requester device 154 permits the user to enter information relating to a process executed by the host site. The information may be entered by the requester 102 in any conventional data processing format. In the embodiment of Fig. 3, the user may enter the information via a template 132, which may be an HTML template, JAVA applet, or other conventional mechanism for permitting user entry. The entry of the data could be via pull-down menus, clicking on a series of icons, or other mechanism. The requester-entered information may vary, as described below.

One aspect of the current disclosure is an Internet search tool using large arena searching methods and systems.

Fig. 4 depicts a system 510 that comprises a computer network system for providing large arena searching. System 510 includes a search server 512, a plurality of client stations 514A, 514B, and 514C, a wide area network connection (WAN) 516, a plurality of local area network area clients 518A and 518B and a local area network (LAN) 520.

The depicted search server 512 is a search and advertisement engine that generates and serves search pages to the participants of the large arena search. The computer platform of the search server 512 can be an MIPS R10000, based mullet-processor Silicon-Graphic Challenge server, running IRIX 6.2.

The search server 512 can connect to a database served from a series of local 7200 RPM Seagate hard drives. The search server 512 can connect to a wide area
network, such as the Internet, via a shared Ethernet connection to a router. Preferably the router is selected for its proximity to a major internet node, such as the MAE-EAST internet node. Fig. 4 depicts this ethernet connection as the WAN connector 516.

Each participant of the search can sit at a client station, such as the depicted client stations 514A, 514B and 514C. Each of the client stations can be a conventional personal computer system, such as a PC compatible computer system that is equipped with a client process that can operate as a browser, such as the Netscape browser program that allows the client station to download computer files, such as web pages, from the search server 512.

Fig. 4 further depicts that the search server 512 can connect via a local area network (LAN) 520 to a plurality of client elements, such as client stations 518A and 518B. Again, each of the depicted client stations 518A and 518B can be conventional computer stations, such as PC compatible computer systems that are equipped with a process for receiving computer files from the search server 512. Accordingly, the systems of the invention allow for providing a large arena search over a network. Optionally, one aspect of the systems may be establishment of a gaming complex, such as a casino, or bingo parlor, assembled from commercially available and inexpensive computer equipment that is suitable for providing a computer network.

It will be apparent to one of ordinary skill in the art that the search server 512 and client stations 514A-514C and 518A-518C can comprise conventional commercially available computer hardware that becomes configured according to the
systems of invention by the operation of computer software that configures the conventional computer hardware to operate as systems according to the invention.

Fig. 5 depicts diagrammatically one embodiment of a software system suitable for configuring the computer hardware depicted in Fig. 4 to operate as a system according to the invention. In particular, Fig. 5 depicts a software system 530 that includes a client process 532, an HTTP server listener process 534, an HTTP server process 536, a server temporal process 538, a daemon 540, a log file 542, a data file 544, a database 548, and an HTML page 550.

The client process 532 can be a computer program operating on the client stations such as those depicted in Fig. 4, that are capable of downloading and responding to computer files served by the server 512. In particular, the client process 532 can be a browser program that is capable of forming one or more connections to an HTTP server process for transferring pages from the HTTP server process to the client process 532. Such a browser process can be the Netscape Navigator browser process, the Microsoft Explorer browser process, or any other conventional or proprietary browser process capable of downloading pages generated by the server 512.

Fig. 5 further depicts that the client process 532 forms one or more connections to the HTTP server listener process 534. The HTTP server process can be any suitable server process including the Apache server. Suitable servers are known in the art and are described in Jamsa, Internet Programming, Jamsa Press (1995), the teachings of which are herein incorporated by reference. In one embodiment, the
HTTP server processes serve HTML pages representing search requests to client processes making requests for such pages. An HTTP server listener process 534 can be an executing computer program operating on the server 512 which monitors a port, typically a well-known port 580, and listens for client requests to transfer a resource file, such as a hypertext document, an image, audio, animation, or video file from the server’s host to the client process host. In one embodiment, the client process employs the hypertext transfer protocol (HTTP) wherein the client process 532 transmits a file request that specifies a file name, an internet location (host address), and a method, such as the HTTP, or any other proprietary or standard protocol suitable to retrieve the requested file. The HTTP server listener process detects the client request and passes the request to the executing HTTP server processors, such as the HTTP server process 536. It will be apparent to one of ordinary skill in the art, that although Fig. 5 depicts one HTTP server process, a plurality of HTTP server process can be executing on the server 512 simultaneously. The HTTP server processors can pass the file request typically round-robin style until an HTTP server process is identified that is available to service the client’s request.

In an optional embodiment, the HTTP server process that is available to service the request can cause a server temporal process, such as the server temporal process 538, to be forked off. The server temporal process 538 receives the client’s request and processes it to generate, or provide, a page signal to be served to the client. In one embodiment, the server temporal process 538 is a non-parsed header CGI script that produces an HTML page that is passed to the client process 532. The client process 532 will decode the page signal and display to the participant.
Continuing with the example described above, the HTML page served by the server temporal process 538 to the client process 532 will be processed by the client process 532, the browser program, to generate a graphical image of the search request page being requested by the participant. One such page is depicted in Fig. 8, and will be explained in greater detail hereinafter. The participant can view and study the search request page. To the extent that the participant can identify information that is responsive to a search request listed on the search request page, the participant can activate a control, such as a button, on the search request page to submit, typically by typing into a form provided by a JavaScript, an applet or other technique, identifying information with respect to the answer to the query, such as, for example, the title of a publication, name of a product or other identifying characteristic of the identified response to a search request.

The server temporal process 538 can create a log file 542 in which the server temporal process 538 stores a signal that identifies the participant that has submitted information in response to a search request and the identification information provided by the participant. The log file 542, or a database, can be generated by a CGI Script or any other suitable technique, including any of the techniques described in Graham, *HTML Sourcebook*, Wiley Computer Publishing (1997) the teachings of which are herein incorporated by reference. In one practice, the server temporal process 538 directs the storage of this information within the log file 542. Accordingly, the log file 542 can act as a database that stores information relevant to responses, such as titles of references, names of products or other identifying information identified by the participants.
Optionally, the server 512 can allow a participant to search the file to determine if information identified by the participant has been earlier located by another participant. In this embodiment, the server can provide the participant with a text field on a page, into which the participant can enter information, such as the aforementioned identifying information, for example, in the patent context, the publication title, product name, patent number, or other identifying information of the reference that the participant has located. The server can fork off another temporal process such as temporal process 538, to direct a search program to search through the file 542 to match the string entered by the participant. If the string is located, then the temporal process 538 can generate a page signal indicating that the information responsive to the search request has been earlier found and will not be credited to the later participant. Alternatively, if the string is not found, then the process 538 can generate a page indicating that the information is newly found, and the participant can be credited for it. Optionally, the file 542 can be preloaded with a list of information already known as relevant to the subject matter of the search. For example, every reference cited during patent prosecution can be stored in the file 542 in the case of a patent search, to thereby let participants know that these references have already been identified.

In one embodiment, after a search request has remained in the system for a set period of time, or by user action, the search can be deemed terminated. Optionally, the server temporal process can generate an award file 544, that indicates an award being granted for the submission of a qualifying response to a query, such as a reference deemed to invalidate a claimed invention. The award file can include the name of the participant that submitted the response, the identifying information about the query and the response to the query, and the time of the submission. Further optionally, the server can monitor a time-of-post field carried by the search request signal that indicated when the search was posted on the server 512.
the extent that the time-out signal indicates that the search request has been posted for a predetermined duration, the process 538 can time out the request and generate a file 544 that contains information representative of a failure to identify a successful response to a query.

In either case the file 544 can be sent to the daemon 540 that can store the file information into the database 548 for later analysis. Optionally, the daemon can generate or update an HTML page that lists the names of those participants that have been deemed to have submitted a successful query response.

Fig. 6 depicts the process that a user would perform in order to access the server 512 depicted in Fig. 4 and begin searching for responses related to a particular search request. Specifically, Fig. 5 depicts a process 560 that includes steps 562 through 582. In step 562 the user logs on to the server 512 depicted in Fig. 4. Process 560 includes an optional step 564 wherein a user would enter a password that server 512 would verify before granting access to the search requests under its control. As shown in Fig. 5, if the server 512 fails to accept the password entered by the user, then access is denied and the process 560 proceeds to step 568 and is over. Alternatively, if the server 512 accepts the password entered by the user the process 560 proceeds from step 564 to step 570. In step 570 the user is presented with a home page, such as the home page depicted in Fig. 7, which will be described in more detail hereinafter.

Optionally, in step 570, the user can select a language to proceed with. For example, the user can select to receive pages written in English, Russian, Japanese, Chinese, Korean, French, or any other language familiar to the user. Upon selecting a language, the process 570 proceeds to step 572 wherein the user is provided with a page, typically an HTML page and
provides information about the characteristics of the publication being sought. For example, the search requester page can include a figure that depicts the proposed invention, as well as a text description of what it is that is, or has been, claimed. One such search request page is depicted in Fig. 8, and will be described in greater detail hereinafter. The user can study the search result page to determine the type of prior art that is relevant for this search request, it can formulate, if necessary, a search strategy.

After step 572, the process 560 proceeds to the optional step 574, wherein the user chooses to download data files to their computer system for use in their search. These data files can include text files that contain the gene sequence for a relevant gene, for copies of patent applications or publications, computer code listings relevant to software inventions, or any other information that would be helpful to a searcher when performing the search request.

In steps 578 through 582, the user completes the search in process. For example, as shown in Fig. 5, in step 578 the user, if possible, identifies information relevant to a query, such as, for example, a publication that is relevant to the patentability or validity of the method or composition described in the search requester page. The user then submits the response by e-mail, regular post, or by any other suitable means, to an administrative office, typically the organization that is administering the search requests, or running the server. After submitting the response, the process 560 proceeds to step 582 and the search process is now complete.

In one optional practice of the invention, the administrative office or host creates a database of all the responses submitted by participants to a search request. The administration office reviews the submitted responses and determines if any of the responses are directly
relevant to the query, for example, to the patentability, registrability, or invalidity of the invention, name or mark or disclosed by a patent-, trademark- or trade secret-related search request. If such a response is identified, then the administrative body, optionally, can provide the user that submitted the response with an incentive award, for example a cash prize.

Optionally, the systems and methods disclosed herein permit the party submitting the query or request to the search request page to identify an award, or bounty, for finding the sought-after information, goods or services, as well as the conditions for retrieving the bounty. Such conditions could include being the first party to respond, being the party providing the best response (by any of a range of possible measures, such as objective standards, subjective standards, the judgment of the requester, or the judgment of the host) within a time period, being the nth party to respond to a particular request, being selected at random, or by any other conditions. The award or bounty could be a cash award, goods, services, information, a non-cash prize, a discount coupon, or any other consideration.

Fig. 7 depicts a home page 590 that can be provided by the server 512 of Fig. 4 for providing a participant with an interface to the search requests maintained at the server 512. When a user employs its client process, typically a browser, to access the URL of the search request web server, the server 512 provides to the user's client process the HTML page 590. The HTML page 590 provides controls that allows the user to navigate through the web pages of the search request web site. For example, the home page 590 includes a control 594 depicted in Fig. 7 as a button labeled The List. The control 594, when activated by the client, typically by clicking the control with a mouse, directs the server 512 to download to the client a list of search requests that have been uploaded to the server 512. Optionally, the list page that is provided to the user includes a set of categories, such as biotechnology, medical
devices, electrical engines, software, trademarks, business names, trade secrets, chemistry, and others, each of which represents the general subject matter of a set of search requests associated with that category. The listed categories can each be presented as hypertext links which will again link the user to a set of web pages, this time listing the titles of search requests that are associated with the categories selected by the user. It will be apparent to one of ordinary skill in the art of computer engineering and information systems that a single search request can, if applicable, be listed within several categories. By clicking on a hypertext link of any search request, the user will be presented with a search request page, such as the search request page depicted in Fig. 8, which will be described in greater detail hereinafter.

Returning to Fig. 7, it can be seen that the home page 590 also can include a password text field 596 wherein the user can enter a password that allows them to access the server site of the search requests. In this way, at the option of the administrative office operating the server 512, participants in a search are required to have preapproval, wherein such preapproval provides to the participant a password allowing access to the search request pages.

Fig. 7 further depicts that in an optional embodiment the home page 590 can provide controls 598 that allow a user to select the language of text provided within the pages downloaded by the user. Typically, the server 512 will maintain a separate page, or separate files, that can be incorporated as text into a page, wherein the text associated with either the pages or files is in one of the languages associated with one of the controls 598. In this way, the user by activating a selected control 598 can instruct the server 512 to provide page signals including search request signals in the preferred language of the user.
In an optional embodiment, if the user fails to enter a valid password, the server 512 can present the user with a registration page containing a contractual agreement between the administrative office of the company administering the search requests and the prospective user. Additionally, the home page 590 can include a registration response field (not shown) that a user can employ to enter the title of a publication, or the name of the product, or any other identification for a response identified by the user. In this way, the user can, through the web site, register that the user has identified a response, such as a reference, relevant to the search request and can identify relevant information about the response. Optionally, the server can generate a return receipt for the user providing a unique identification number identifying this submission of a response to the system. The return receipt can also include a time of day stamp to indicate the time of day during which the response submitted by the user was received by the server 512. Using this information, the administrative office or the server 512 can determine, if a relevant response is found by more than one party, who submitted the earlier response. In one practice, the user that submits the response earlier is credited with finding that response.

In a further optional embodiment, the home page 590 can include a search engine that allows a user to enter the name of the product, title of a publication, or any other identifier of a response. The search engine can search a database of existing registered responses to determine if the response has already been identified by an earlier party. If such is the case, the search engine can return a negative indicator, providing the user with a signal that instructs the user that this response will not be credited to the user, and that if the response is determined to warrant a reward, that reward would go to an earlier party having previously submitted that response. In a further optional practice, a person preparing a search request page, such as the page depicted in Fig. 8, can also submit a list of known responses deemed relevant to the
query, such as to the patentability or validity of the subject matter of the search request. For example, in the case of a validity search of an issued U.S. patent, the party making the search request can identify and store the database of every publication cited during prosecution of that patent. In this way, a party that identifies a relevant response, such as a reference that was cited during prosecution, can receive an indication that publication was already known to the party, and therefore will not be credited as a response that will provide an award to the user.

Fig. 8 depicts a search request signal 5100 that includes an image 5102, a text field 5104, a text field 5106, and a hypertext link 5108.

The search request page 5100 can be an HTML page generated by a development kit, or a web authoring tool, or any other suitable authoring system, and will be understood to one of ordinary skill in the art that the present invention is not limited to any system or technique for creating search request pages. Moreover, it will be understood that the depicted search request page 5100 is merely representative of one type of page that can be provided for informing users of the subject matter of a search request, and that any other suitable format for providing a search request can be practiced with the present invention without departing from the scope thereof.

In the depicted embodiment, the search request page 5100 includes a graphic image 5102 which reprints for the search request a figure depicting the subject matter of the search request. Accompanying Fig. 5102 is a text description 5104 that provides further characteristics and sets of details regarding the search. For example, in the case of the patent search, the text description might set forth the date of application for any response that is to be
submitted by a user. The text might optionally describe a career or investment opportunity sought, a particular type of home or business real estate opportunity, or any other information that might be known to a small subset of individuals.

In the depicted embodiment, the page signal 5100 further includes a text block 5106 that provides a statement of the claimed subject matter, emphasizing a particular element of the text description, such as an element of claimed subject matter, by emphasizing or underlining that subject matter. Additionally, the page 5100 includes a hypertext link 5108 that allows the user to jump to links related to the subject matter of the search request. For example, the hypertext link 5108 of the depicted embodiment can provide a link to a page providing background information of inventory control systems that may be helpful to the user in formulating a search strategy.

In alternative embodiments, the search request can employ the multimedia capabilities of the hypertext transfer protocol, or any other protocol suitable for transferring search requests, to provide to a user sound files, videos, examples of application programs, the text of gene sequences, or any other information helpful for the user to formulate a search. In one optional embodiment, the search request page can allow a user to download data files that have sets of information helpful in formulating a search strategy, or in performing a search. Other modifications and additions can be made to the search request page 5100 without departing from the scope of the invention.

In an optional practice, the server can be provided with a site blocker mechanism that allows the server to selectively control the availability of the page signal responsive to a signal provided by the participant. For example, the server can employ cookies to identify the
computer network from which a participant is accessing the server. In this way, the server can selectively block those participants that are not allowed to play in a particular search.

For example, the server can choose to block computer networks that are associated with professional organizations. In this way, the search can be marginally limited to amateur participants. In another aspect, the invention is to be understood as a development kit that allows the user to generate a mark up language page signal which is suitable for being employed by the server as a page signal that represents a new search contest to a large arena of participants. The development kit can be a computer program that the user can use to develop a WEB page that describes an item the user wishes to identify, and which can be readily uploaded to the search server.

In one embodiment, the development kit comprises a page generation mechanism that provides a page signal form to the user. The kit can further include a control for allowing the user to include within the page signal form a text signal which is representative of a set of characteristics of the item to be identified by the participants in the search, and a control for allowing the user to include within the page signal form a set of predetermined page lengths for linking one or more of a set of known pages which are controlled by the search server.

Optionally, the development kit can include an automatic control for allowing a time of posting date field to be included within the page signal form, wherein the time of posting field contains a signal that is representative of the time of uploading event by the user to the search server. The server can store his time of posting signal to control how long the page signal will be presented to participants for being timed-out and removed from the server. Additionally, the development kit can include a site blocking control for allowing the user to identify at least
one computer network and for generating an instruction to a server for directing the server to prevent download of the respective markup language page to that at least one identified network. This allows the user to restrict the computer networks, and therefore some of the participants that can see that a search contest has begun for a particular item. Similarly, the development kit may include a push site control mechanism for allowing the user to specify at least one computer site to which the respective markup language can be pushed. In this way, the user can selectively target those participants that have specifically requested to be alerted each time a search contest begins in one or more categories.

Referring to Fig. 9, steps are depicted in a flow chart 5110 for use of systems and methods disclosed herein by a search requester and by a participant. First, in a step 5112, a search requester may enter a search request, using a page signal such as that described above. The search request may be a request for information relevant to a trademark, patent, trade secret or other item of intellectual property. The search requests may optionally be stored in a database of search requests, so that the host or another entity may access information about the search requests, such as information about the tastes, desires and needs of the requesters, which may be useful in targeting advertisements for particular goods and services to that subset of requesters.

Next, the requester may, optionally, at a step 5114, establish satisfaction conditions for satisfying the search request. The conditions may include conditions relating to timing, order of responses, or the like, or may include conditions as to the quality of the retrieved responses. For example, a condition may be that the response not consist of information already in possession of the requester. Establishment of search conditions may be accomplished by a variety of mechanisms, such as via a text description, a JAVA applet, an HTML or dynamic
HTML template, or other conventional mechanism for entering text or data through a network protocol. The host may establish parameters for search descriptions, or may permit free text descriptions. Depending on the conditions, it may be possible to automate the determination of whether a response satisfies them. For example, a query might offer a bounty to every response, or to the first response, regardless of content.

Next, at a step 5116, the search requester may establish a bounty to be awarded upon satisfaction of the conditions established at the step 5114. The bounty may be any consideration, as described above. The bounty may be entered through a similar mechanism as used in the establishment of satisfaction conditions, such as a JAVA applet, an HTML or dynamic HTML template, or other conventional mechanism for entering text or data through a network protocol.

Next, at a step 5118, the host or the search requester may optionally identify a category for the search request. Thus, search requests may, through the step 5118, be entered into groups of similar requests, so that participants may easily identify areas in which they are likely to be able to provide successful responses. The categories may be administered by the host or established by the search requester.

Next, at a step 5120, a participant may view the search, such as through a browser or similar network process, to determine whether the participant has access to goods, services, information or other items that satisfy the search request. If so, then at a step 5122 the participant in the search may enter a response. Entry of the response may be by electronic mail, by regular mail, or on-line via an HTML template, Java applet, or other mechanism capable of transmitting information about the response to the host and the requester. The host
may optionally collect responses in a database of information. The database may include categories of information associated with the requests, so that over time information retrieved from previous searches may be found via conventional database search technology using the database. The host may also use such information for other purposes, such as collecting information about the participants, including information as to the expertise of each participant. Thus, in an aspect, the invention assists in establishing not only a marketplace for the general public, but also a mechanism by which subject matter experts can be identified and tracked.

Next, at a step 5124, a determination can be made whether to award the bounty. That is, it can be determined whether the conditions established at the step 5114 are satisfied. Depending on the conditions, this may be done automatically, or by action of the host or the search requester.

If at the step 5124 it is determined that the satisfaction conditions are met, then the bounty may be awarded at the step 5126. The bounty may optionally be awarded by the host (who may collect bounties from the search requesters, either in advance or upon satisfaction of a search request), by the requester, or by a third party. The award may be fulfilled by credit card, electronic check, paper check, cash, or an appropriate fulfillment method for goods, services, or in-kind consideration.

If at the step 5124 it is determined that the satisfaction conditions established at the step 5114 have not been met, then a message may optionally be sent to the participant at a step 5128, informing the participant that no bounty will be awarded for that response.
Optionally, the systems and methods disclosed herein may further include establishing a database of requests and responses to requests that are made in accordance with the methods and systems disclosed herein. Thus, data may be collected about a wide range of topics and stored in a database to assist in on-line searching of the data. Data about search requests can be stored and accessed as a way of identifying desires, needs and tastes of requesters. Thus, advertising for products and services can be targeted to the population of requesters as a whole, or to particular subsets of requesters, according to those desires, needs and tastes.

In an optional aspect of the invention, systems and methods are provided for analyzing groups of patents within given subject matter fields. United States patents are divided into subject matter areas according to class- and sub-class classifications by patent examiners at the United States Patent and Trademark Office. Similar classification schemes are used by Patent Cooperation Treaty examiners, European Patent Office examiners, and examiners at other patent offices throughout the world.

In some situations, it may be desirable to know the "landscape" in a particular patent field. In many industries, the most relevant patents are those that are held by large companies that have resources to enforce patents in litigation and that have large numbers of patents. Accordingly, it may be desirable to depict graphically the landscape of a patent field by showing who the industry players are that hold a certain number of patents in a given field (as determined by class/sub-class combinations or other classifications) and by showing the size of their respective patent portfolios in the given fields. A database may be pre-computed setting forth the numbers of patents assigned to particular companies or naming certain individuals in each possible class/sub-class combination. A ranking can be established for each such
combination, whereby the industry player having the highest number of patents can be ranked first, the industry player with the second highest number of patents can be ranked second, and the like. By entering a class/sub-class combination in an HTML template, a user can obtain an instant answer as to who are the primary patent holders in each class/sub-class combination, including information as to the number of patents held by each such holder.

In some cases, class/sub-class combinations may not reflect a desired logical division of subject matter. Accordingly, classes and sub-classes can be aggregated, by the host, or by the requester, or classes can be sub-divided into sub-classes. Thus, the host or requester can establish a customized arrangement of classes and sub-classes into a logical subject matter area, then establish a ranking of industry owners or inventors.

TEC/QUEST RELATIONAL TOOLS

Reference citing frequency in class/sub-class combinations can serve as a basis for identifying relevant art.

PATENT BLUE BOOK

Although full understanding of the scope of a patent requires an extensive analysis of the specification, claims and file history of the patent and related patents, in many situations time is not available to conduct such an analysis. For example, in corporate acquisitions, professionals doing due diligence reviews of patent portfolios are often asked to review a large
number of patents in a very short time. Similarly, individuals mining corporate patent portfolios for valuable patents often have very little time to spend on a particular patent.

Certain key aspects of patents can be assessed in relatively little time. In fact, a skilled practitioner can often give a quick, informal assessment as to the quality of a patent in only a few minutes. In some cases, the assessment is based on subjective factors, such as the quality of the writing of the specification and claims. However, other factors are either objective, or can be represented by objective factors or proxies.

Examples of factors relevant to the quality of a patent include the number of claims, the length of the shortest independent claims, the presence or absence of claims of different statutory construction, the use of “means” language in the independent claims, the number of references cited in prosecution, the length of the specification, the presence of multiple embodiments in the figures and specification, the use of broad terms in the independent claims, the name, location and size of the law firm that wrote the patent, the filing date, the length of the remaining term, the number of other patents owned by the patentee, they attorney prosecuting the case, the quality of the references cited, the number of other patents naming the same inventors, and the presence of cross-references to related applications. If the file history of the patent is available, additional factors can be identified, such as the thickness of the file history, the number of words added by amendment, whether there were rejections under 35 U.S.C. 102, whether there were rejections under 35 U.S.C. 103, and the length of the remarks made in the amendment. Although any one of these factors may provide only a rough indicator of the quality or scope of a patent, the combination of all of the factors allows a practitioner to obtain a general sense of the quality of the patent, without requiring any substantive analysis of the claims or the prior art. Thus, by using this information, the
practitioner may obtain a preliminary estimate of which patents are likely to be of high quality, therefore meriting further attention in the course of a due diligence review or corporate mining project.

It is possible to establish a simple heuristic equation for the estimation of the quality of a patent, using values obtained for each of the variables mentioned above, as well as any other variable identified by the host. Thus, an equation can use the following variables:

\[ NM = \text{number of claims} \]
\[ NI = \text{number of independent claims} \]
\[ LE = \text{Length of the shortest independent claim} \]
\[ SCY = \text{Presence of claims of different statutory construction} \]
\[ ME = \text{Use of "means" language in the independent claims} \]
\[ RF = \text{Number of references cited in prosecution} \]
\[ SP = \text{Length of the specification} \]
\[ EMY = \text{Presence of multiple embodiments in the figures and specification} \]
\[ BRY = \text{Use of broad terms in the independent claims} \]
\[ LFNIR = \text{Rating based on name of law firm} \]
\[ FD = \text{Filing date} \]
\[ RT = \text{Remaining Term} \]
\[ CRY = \text{Cross-references to related applications} \]
\[ FHT = \text{Thickness of the file history} \]
\[ AM = \text{Words added by amendment} \]
\[ NOVY = \text{Rejections under 35 U.S.C. 102} \]
$OBY = \text{Rejection under 35 U.S.C. 103}$

$OPA = \text{Number of other patents owned by Assignee}$

$OPI = \text{Number of other patents naming same inventor(s)}$

$LA = \text{Length in lines of the remarks made in amendment}$

$AT = \text{Rating for the attorney prosecuting the case}$

$LI = \text{Litigation activity in the class/sub-class of the case}$

$QR = \text{Quality of references cited}$

$LP = \text{Layers of Protection}$

$LIT = \text{Result of litigation involving patent}$

$IV = \text{Presence of interview}$

Each of the variables can be multiplied by a constant, allowing for normalization of the different amounts that are measured in different units, providing an equation such as the following:

$$V = A^*NM - B^*LN + C^*SCY - D^*ME - E^*RF + F^*SP + G^*EMY + H^*BRY + I^*LFNR + J^*LP + L^*FD + M^*CRY - N^*FHT - O^*AM - P^*NOVY - Q^*OBY + R^*OPA + S^*OPI - T^*LA + U^*RT + V^*IV + W^*AT + X^*LI + Y^*NI + AA^*LIT + BB^*IV$$

Where $V$ is the value obtained by adding each of the elements. It can be observed that various variables are indicated to have either an additive or subtractive effect on the overall value of the patent. For example, the number of claims is a positive factor, as a larger number of claims makes the patent more difficult to analyze for a defendant and increases the odds that at least one claim is infringed. The length of the shortest independent claim, $LN$, is a negative
factor, as longer claims are, on average, narrower than shorter claims. Other positive factors include SCY, which can be given a value of one if there are claims of different statutory construction. Other negative factors include ME, indicating the use of “means” language in the independent claims, which can have a narrowing effect on a patent’s construction, and RF, the number of references cited in prosecution, which can roughly indicate that the patent had a difficult time in the prosecution stage. The length of the specification, SP, is a positive factor, again contributing to the difficulty of analysis on the part of a prospective defendant and suggesting thoroughness in preparation. The presence of multiple embodiments, EMY, is another positive factor, suggesting thoroughness and increasing the likelihood that generic claim language can be supported in litigation. In embodiments, factors could be positive or negative, depending on the value of the variable itself. For example, the variable AT, representing the attorney-prosecuting the case, could be given a value that is positive or negative, depending on the rating of the attorney as described elsewhere herein.

The use of broad terms in the independent claims is a positive factor as well. The variable BRY could be made one if only broad terms are used, and zero if some narrow term is used. Terms can be characterized as either broad or narrow based on the viewer's quick assessment, or based on statistics. Thus, for each term, the term’s frequency of appearance in the English language can be measured, with terms having a threshold frequency being considered "broad" and terms having less than a threshold frequency being considered narrow. The frequency could also be determined in the context of the technical field (or class/sub-class combination) of the patent. The name of the law firm LFNR can be assigned a range of values that can be stored in a lookup table. The quality of a law firm can thus be estimated by the host based on subjective evaluations, or on objective factors, such as rankings by visitors who come to the site, rankings by number of patents issued to the law firm in recent years, and the
like. Thus, a look-up table can be used to retrieve a law firm ranking to be inserted as a positive or a negative in the above equation. The size of the law firm LFS might be expected to be a positive factor. The location of the law firm, LFL, could also be assigned a range of possible values in a lookup table, based either on subjective evaluation of the quality of the patent bar in given cities or on objective factors, such as number of law firms in the location, or number of patents issued to law firms in the city. Thus, law firms in particular cities might be additive factors, while law firms in other cities might be negative factors. The filing date, FD, can be treated as a negative factor, if dates are entered numerically, with more recent dates representing higher numbers. Thus, an early filing date can be viewed as a positive. The remaining term, RT, is another positive factor, representing additional value for the patent. Obviously, FD and RT are somewhat in tension, representing that an early filing date is valuable for priority, but that a long remaining term is also a factor. It is possible that these factors could be hypothesized to have non-linear effects. Thus, an early filing date might be valuable up to a point, but a remaining term might be increasingly important as the patent ages. These hypotheses could be addressed by additional variables or by making non-linear the contribution of one or more variables. Cross-references to related applications, CRY, may also be a positive factor, suggesting additional patents owned by the same patentee in the same subject-matter area, in turn suggesting an effort to build a strong portfolio.

Another positive factor, NI, reflects the number of independent claims of the patent.

Another positive factor, LP, reflects the number of layers of protection provided in the patent, as measured, at least roughly, by the length of the chains of dependent claims and by the presence of multiple dependent claims.
Many of the foregoing factors can be analyzed from the information on the patent itself. Thus, a partial version of the equation can be used if only that information is available. If other data are available, other factors can be included. For example, by looking at the file history of the patent, a number of other factors can be identified, with mostly negative effects, since prosecution rarely broadens a patent. These factors include FHT, the size of the file history, such as in inches or pages, AM, the number of words added by amendment, suggesting significant narrowing of the patent, NOVY, which can be given a value of one if there were novelty rejections, OBY, which can be given a value of one if there were obviousness rejections, and LA, the length of remarks in an amendment. All of these factors suggest a difficult prosecution path, compared to a baseline where they are not present.

A positive factor arising in prosecution is the presence of an examiner interview, represented by giving a value of one to the variable IV. Interviews can typically be viewed as indicating importance of the case to the patentee and an effort to overcome rejections without filing the file history with narrowing language.

A number of other factors can be identified through use of databases and knowledge collection methods and systems. These factors include OPA, the number of patents owned by the same assignee, and OPI, the number of patents with the same inventor(s). Both of these factors, if large, show that the patent belongs to an entity or was invented by an individual with experience in the patent field. Moreover, they suggest the possibility that the patent is part of a larger patent portfolio or patent strategy, increasing the likelihood that the patent is valuable, either alone, or in combination with other patents.
Another factor is AT, representing the attorney prosecuting the patent case, which may be a positive or negative factor. The value of AT may be entered by the user, or it may be obtained through other objective or subjective rating methods. For example, a database of attorney ratings may be established, which may be used to store and permit access to the rating for a particular attorney. Methods and systems for establishing ratings for attorneys are disclosed elsewhere herein.

Another factor, LIT, relates to whether the patent has been involved in litigation. LIT may be positive or negative, depending on the outcome of the litigation, or zero if no litigation has occurred. For example, a patent that has been held invalid in litigation would have a very negative LIT value, while one that has been held valid would have a very high value.

Another factor, LI, relates to the frequency of litigation in the area of the patent, such as determined by the frequency of litigation in the primary class/sub-class combination of the patent. LI may be given a positive value, because patents in litigation-intensive industries may generally be understood to have greater importance than patents in industries where little litigation occurs. A database of values of LI for various class/sub-class combinations may be established by examining litigation activity for patents over a period of time.

Once an equation of the type of above is created, it can be tested and refined through econometric and statistical methods, such as regression analysis, multiple regression analysis, and the like. Thus, a set of patents having definable values can be entered into the system, and an estimation, such as a least-squares regression or other econometric technique, can be made of the constants that established the closest fit between the above equation and actual
experience. A significance score can be obtained for each of the variables and for the equation as a whole.

Different factors may have greater relevance in particular industries. Thus, the equation can be refined on an industry- or subject matter- basis. Once refined, some variables may be deleted after being identified as having little relevance. Other variables might be refined by including non-linear elements. Obviously, other objective factors may be found that offer additional explanatory power within the scope of the invention.

Systems and methods for using this analytical tool can be understood with reference to the figures. Referring again to Fig. 1, the entities involved in an embodiment of a method and system disclosed herein are depicted in schematic format. In a system 100, a plurality of requesters 102, providers 108 and a host 104 are connected via a network 110. It should be understood that any number of requesters 102, hosts 104, and providers 108 could participate in such a system 100. The host system 104 may be one such as that depicted in connection with Fig. 2, and may be associated with one or more databases 114 for storing data relevant to the processing steps and variables depicted below.

In this embodiment host 104 may host an Internet site that permits requesters 102 to enter data relating to a patent and to obtain a rating as to the value of the patent, or a ranking of the patent relative to other patents for which data are entered. Requesters 102 may be litigators involved in a litigation involving the patent, professionals conducting due diligence on a patent portfolio, individuals mining a database or portfolio of patents for valuable patents, or others. Requesters 102 may enter the site using a web browser or similar process over a
computer network, at which point they may be prompted to complete a number of steps, as depicted in the following figures.

Referring to Fig. 11, a flow chart 600 is depicted in which steps by which a requester may obtain a valuation of a patent are depicted. First, at a step 602, the user may be given an opportunity to initiate a valuation of the patent. For example, the user may be presented a button, icon, link, or similar process labeled “value a patent,” “patent blue book” or the like, on a the host’s Internet site. If at the step 602 the user indicates a desire to value a patent, such as by clicking on an icon, the user may, at a step 604, be asked to enter data relevant to the patent. Data entry may be via an HTML template, JAVA applet, Dynamic HTML template, or the like. As data is entered by the requester 102, it may be sent to a database, such as the database 114 of Fig. 2. The database 114 may store a variety of data, including a data file for each patent that is valued by the system, as well as data files for information entered by users or obtained from other databases that is used for valuing patents in accordance with the systems and methods disclosed herein. Optionally, the templates may be presented to the requesters 102 at the host site via the dynamic HTML page generator described elsewhere herein. The data may be entered into a single template in a single step, or may be entered step by step into one or more templates. An embodiment of a template 800 for data entry is depicted in Fig. 12. Referring to Fig. 11, at the step 604, the user is first asked either to enter the patent number or to request help. In the embodiment of Fig. 12, this selection may be accomplished by typing the patent number in the template 802 for the patent number, or by clicking the “help” button 803 adjacent to the patent number template 802. If the user enters the number at the step 604, then processing proceeds to a step 606 where the system queries whether a valuation has already been performed for a previous request for that patent number. If so, then the file for that patent is retrieved from the database 114 and
displayed to the user at step 607. Optionally, the user may, at a step 602, alter items retrieved from the file and obtain a new valuation, by proceeding through the same steps as are applicable for a patent for which no file exists. Steps for obtaining a previous valuation are set forth in a process 700, which is illustrated in Fig. 13 and which is connected to the flow chart 600 by off-page connector A. If the user requests help at the step 604, then the user is sent to a help process, where the user is instructed how to complete the patent number template 802; for example, the requester 102 may be instructed to look at the upper right-hand corner of the patent to find the patent number and is instructed to enter the seven digit patent number into the patent number template 802. If at the step 606 it is determined that the patent has not been valued before by the host system, then at a step 610 a new database record 900 is created in the database 114, with the patent number, or an identifier based on the patent number, serving as a record identifier 902 in the database 114. An example of one embodiment of a database record 900 in the database 114 is depicted in Fig. 14. The database record 900 includes a plurality of fields, including the record identifier 902 and a field for holding a value for each of the variables that is used in the equation described above, as determined by user entry or other processing steps described herein. Thus, the database record 900 may optionally include, in addition to the patent record identifier 902, a claim number field 904, an independent claim number field 908, a shortest claim length field 910, a statutory construction field 912, a “means” claim field 914, a number of references field 918, a specification length field 920, a multiple embodiments field 922, a term breadth field 924, a law firm name field 928, a law firm rating field 929, a law firm size field 930, a law firm location field 934, a law firm location rating field 936 a filing date field 938, a remaining term field 940 a cross-reference field 942, a layers of protection field 944, a thickness field 946, an amendment words field 948, a novelty rejection field 950 an obviousness rejection field 952, an assignee field 954, an assignee portfolio field 955, an inventor field 958, an inventor portfolio field 959,
a remark length field 960, an attorney field 962, an attorney rating field 963, a class/sub-class field 964, a litigation frequency field 966, a quality of references field 966, a litigation results field 970 and an interview field 972.

Next, at a step 611 the user is prompted to enter the number of claims into a claim number template 804 or to ask for help by clicking the help button 805 adjacent to the claim number template 804. If the user asks for help, the user is sent to a help process, where the user is instructed, for example, to look at the number of the last claim on the last page of the patent. If at the step 611 the user enters the number of claims, then at a step 612 the system updates the claim number field 904 in the record 900 for the patent in the database 114.

Next, at a step 614 the user is prompted to enter the number of independent claims into an independent claim number template 808, or to ask for help by clicking the help button 809 adjacent to the independent claim number template 808. If the user asks for help, the user is sent to a help process, where the user is instructed, for example, to count the claims that do not refer back to any other claim. If at the step 614 the user enters the number of independent claims, then at a step 618 the system updates the independent claim number field 908 in the record 900 for the patent in the database 114.

Next, at a step 619 the user is prompted to enter the length in words of the shortest independent claim into a shortest claim length template 810 or to ask for help by clicking the help button 811 adjacent to the template 810. If the user asks for help, the user is sent to a help process, where the user is instructed, for example, to count the words of the claims that do not refer back to another claim, and to enter the shortest number of words for such a claim into the template 810. If at the step 619 the user enters the number of claims, then at a step
620 the system updates the shortest claim length field 910 in the record 900 for the patent in the database 114.

Next, at a step 622 the user is prompted to enter whether there are claims of different statutory construction template 812 or to ask for help by clicking the help button 813 adjacent to the template 812. If the user asks for help, the user is sent to a help process, where the user is instructed, for example, to see whether the independent claims use different words in the preemblem, such as “method,” “system,” “apparatus” or the like. If at the step 622 the user enters an answer of “yes” or “no” then at a step 624 the system updates the statutory construction field 912 in the record 900 for the patent in the database 114.

Next, at a step 628 the user is prompted to enter whether there are “means” claims in a “means” claim template 814 or to ask for help by clicking the help button 815 adjacent to the template 814. If the user asks for help, the user is sent to a help process, where the user is instructed, for example, to see whether the independent claims use the construction “means for.” If at the step 628 the user enters an answer of “yes” or “no” then at a step 630 the system updates the means claim field 914 in the record 900 for the patent in the database 114.

Next, at a step 632 the user is prompted to enter the number of references cited on the front of the patent in the number of references template 818 or to ask for help by clicking the help button 819 adjacent to the template 818. If the user asks for help, the user is sent to a help process, where the user is instructed, for example, to count the references listed on the front page of the patent, and to enter the number into the template 818. If at the step 632 the user enters the number of references, then at a step 634 the system updates the number of references field 918 in the record 900 for the patent in the database 114.
Next, at a step 638 the user is prompted to enter the length in pages of the specification into a specification length template 820 or to ask for help by clicking the help button 821 adjacent to the template 820. If the user asks for help, the user is sent to a help process, where the user is instructed, for example, to count the pages of the specification and to enter the number of pages into the template 820. If at the step 638 the user enters the number of pages, then at a step 640 the system updates the specification length field 920 in the record 900 for the patent in the database 114.

Next, at a step 642 the user is prompted to enter whether there are multiple embodiments in the figures or specification into the multiple embodiments template 822 or to ask for help by clicking the help button 823 adjacent to the template 822. If the user asks for help, the user is sent to a help process, where the user is instructed, for example, to review the figures to see whether they depict different structures or methods and to enter “yes,” “no” or “can’t tell” into the multiple embodiments template 822. If at the step 642 the user enters an answer then at a step 644 the system updates the multiple embodiments field 922 in the record 900 for the patent in the database 114 to reflect the answer.

Next, at a step 648 the user is prompted to enter a rating for the breadth of the terms used in the independent claims into the term breadth template 824 or to ask for help by clicking the help button 825 adjacent to the template 824. If the user asks for help, the user is sent to a help process, where the user is instructed to enter a rating for the breadth of the terms used in the claims. Optionally, the user may, at a step 649 elect to calculate term breadth using a term breadth calculator process. A term breadth calculator process is depicted in Fig. 15, which sets forth a flow chart 1100 for steps used to determine a term breadth.
rating. The term breadth rating process 1100 is connected to the flow chart 600 by off-page connector B, which is further described below. Optionally, the rating may rate breadth of claims on a scale from one to one hundred. If at the step 648 the user enters the rating, or after a rating is determined in the step 649, then at a step 650 the system updates the term breadth field 924 in the record 900 for the patent in the database 114.

Next, at a step 652 the user is prompted to enter the name of the law firm that prosecuted the patent into the law firm name template 828 or to ask for help by clicking the help button 829 adjacent to the template 828. If the user asks for help, the user is sent to a help process, where the user is instructed, for example, to look on the front page of the patent, or in the file history, if available, to determine the name of the law firm. If at the step 652 the user enters the name or enters “don’t know,” then at a step 654 the system updates the law firm name field 928 in the record 900 for the patent in the database 114. Next, at a step 658, the system may execute a process 1200, as depicted on Fig. 16, which is connected by off-page connector C to the flow chart 600. The process 1200, described below, generates a law firm rating from the law firm name field 928 and enters the rating into the law firm rating field 929.

Next, at a step 660 the user is prompted to enter the filing date into the filing date template 838 or to ask for help by clicking the help button 839 adjacent to the template 838. If the user asks for help, the user is sent to a help process, where the user is instructed, for example, to look on the front page of the patent and enter the date of filing. If at the step 660 the user enters the filing date, then at a step 662 the system updates the filing date field 938 with a number representative of a value for that filing date. The value for the filing date may
be obtained in a process through a look-up table or the like. The process 1300 is depicted in Fig. 17 and is connected to the flow chart 600 by off-page connector D.

Next, at a step 664 the user is prompted to enter the issue date into the issue date template 840 or to ask for help by clicking the help button 841 adjacent to the template 840. If the user asks for help, the user is sent to a help process, where the user may find the issue date. Upon entry of the issue date, at a step 665 the system may execute a process 1400 for calculating the remaining term based on the issue date and the filing date. The process 1400 is depicted in Fig. 18 and is connected to the flow chart 600 by off-page connector E. Upon completion of the process 1400, at a step 668 the system updates the remaining term field 940.

Next, at a step 670 the user is prompted to enter the number of applications to which there is a cross-reference in a cross-reference template 842 or to ask for help by clicking the help button 843 adjacent to the template 842. If the user asks for help, the user is sent to a help process, where the user is instructed, for example, to look at the first section of the specification of the patent to find cross-references to related applications and to count them. If at the step 670 the user enters an answer then at a step 672 the system updates the cross-reference field 942 in the record 900 for the patent in the database 114 to reflect the answer.

Next, at a step 674 the user is prompted to enter the number of layers of protection into a layers of protection template 844, or to ask for help by clicking the help button 845 adjacent to the layers of protection template 844. If the user asks for help, the user is sent to a help process, where the user is directed to a process 1500 for determining the layers of protection. Said process 1500 is described further below and is depicted in a flow chart 1500 of Fig. 19 that is connected to the flow chart 600 by off-page connector F. If at the step 674
the user enters the number of layers of protection, or upon return from the process 1500, then at a step 678 the system updates the layers of protection field 944 in the record 900 in the database 114.

Next, at a step 679 the user may be prompted to enter the primary class/sub-class combination for the patent into the class-sub-class template 864 or to ask for help by clicking the help button 865 adjacent to the template 864. If the user asks for help, the user is sent to a help process, where the user is instructed, for example, to look at the front page of the patent to find the class/sub-class combination in bold. If at the step 678 the user enters an answer then at a step 680 the system updates the class/sub-class field 964 in the record 900 for the patent in the database 114 to reflect the answer. The system may also, in an embodiment, in a step 682 execute a process 1600 for determining litigation frequency for patents in that class/sub-class combination. The process 1600 is depicted in Fig. 20, which is connected to the flow-chart 600 by off-page connector G. Upon completion, the resulting litigation frequency can be entered at a step 683 into the litigation frequency field 966 for the record 900 for the patent in the database 114.

Referring to Fig. 11B, next, at a step 6008, the user is prompted to enter the name of the assignee into an assignee template 854 or to ask for help by clicking the help button 855 adjacent to the template 854. If the user asks for help, the user is sent to a help process, where the user is instructed, for example, to look at the front page of the patent for the name of the assignee. Alternatively, processing may be sent to a process 1800 wherein the system consults an assignment records database, such as the database on the United States Patent and Trademark Office web site, and returns information as to the assignee, based on the patent number. The process 1800 is depicted in Fig. 21 and is connected to the flow chart 600 by
off-page connector I. If the step 6008 the user enters the assignee, or after the assignee is determined by the process 1800, the system may at a step 6010 update the assignee field 954 in the record 900 for the patent in the database 114. Once the assignee field 954 is complete, then the system may, in a process 1900, depicted in Fig. 22 and further described below, obtain information for completion of the assignee portfolio field 955 in a step 6011. The process 1900 and the step 6011 are executed upon completion of the step 6010 and is connected to the flow chart 600 by off-page connector J.

Next, at a step 6012, the user is prompted to enter the name of the inventor into an inventor template 858 or to ask for help by clicking the help button 859 adjacent to the template 858. If the user asks for help, the user is sent to a help process, where the user is instructed, for example, to look at the front page of the patent for the names of the inventors. Alternatively, processing may be sent to a process 2000 wherein the system consults an inventor records database, such as the database on the United States Patent and Trademark Office web site, and returns information as to the inventors, based on the patent number. The process 2000 is depicted in Fig. 23 and is connected to the flow chart 600 by off-page connector K. If at the step 6012 the user enters the inventors, or after the inventors are determined by the process 2000, the system may in a step 6014 update the inventor field 958 in the record 900 for the patent in the database 114. Once the inventor field 958 is complete, then the system may by a process 2100, in a step 6013, depicted in Fig. 24 and further described below, obtain information for completion of the inventor portfolio field 959. The process 2100 is executed upon completion of the step 6014 and is connected to the flow chart 600 by off-page connector L. Upon completion of the process 2100, in a step 6015, the system may update the inventor portfolio field 959.
Next, at a step 684, the user is prompted to indicate whether the file history or other additional information is available for the patent. If the user indicates “no”, the processing proceeds to a process 1700, depicted in Fig. 25, where the system calculates the value of the patent. The process 1700 is connected to the flow-chart 600 by off-page connector H.

If at the step 684 the user indicates that more information is available, then at a step 688 the user is prompted to enter the approximate length in pages of file history of the patent, apart from the patent itself and the references into a thickness template 846 or to ask for help by clicking the help button 847 adjacent to the template 846. If the user asks for help, the user is sent to a help process, where the user is instructed, for example, to count the pages of the file history other than the patent application and the cited references. If at the step 688 the user enters the number of pages, then at a step 690 the system updates the thickness field 946 in the record 900 for the patent in the database 114.

Next, at a step 692 the user is prompted to enter the number of words added by amendment to the patent claims into an amendment words template 848 or to ask for help by clicking the help button 849 adjacent to the template 848. If the user asks for help, the user is sent to a help process, where the user is instructed, for example, to examine the file history and to count the underlined words of the claims that appear in each amendment to the patent. If at the step 692 the user enters the number of words, then at a step 694 the system updates the amendment words field 948 in the record 900 for the patent in the database 114.

Next, at a step 696 the user is prompted to enter the number of rejections under 35 U.S.C. 102 into a novelty rejection template 850 or to ask for help by clicking the help button
851 adjacent to the template 850. If the user asks for help, the user is sent to a help process, where the user is instructed, for example, to examine the file history and to count the number of times the examiner has rejected a patent and mentioned 35 U.S.C. 102. If at the step 696 the user enters the number of novelty rejections, then at a step 698 the system updates the novelty rejection field 950 in the record 900 for the patent in the database 114.

Next, at a step 6000, the user is prompted to enter the number of rejections under 35 U.S.C. 103 into an obviousness rejection template 852 or to ask for help by clicking the help button 853 adjacent to the template 852. If the user asks for help, the user is sent to a help process, where the user is instructed, for example, to examine the file history and to count the number of times the examiner has rejected a patent and mentioned 35 U.S.C. 103. If at the step 6000 the user enters the number of obviousness rejections, then at a step 6002 the system updates the obviousness rejection field 952 in the record 900 for the patent in the database 114.

Referring to Fig. 11C, next, at a step 6004, the user is prompted to enter the number of pages of remarks in amendments in the prosecution file history into a remark length template 860 or to ask for help by clicking the help button 861 adjacent to the template 860. If the user asks for help, the user is sent to a help process, where the user is instructed, for example, to examine the file history and to count the pages of amendments, starting with the section entitled “remarks” for each amendment. If at the step 6004 the user enters the number of pages, then at a step 6006 the system updates the remark length field 960 in the record 900 for the patent in the database 114.
Next, at a step 6017, the user is prompted to enter the name of the attorney prosecuting the case into an attorney template 862 or to ask for help by clicking the help button 863 adjacent to the template 862. If the user asks for help, the user is sent to a help process, where the user is instructed, for example, to examine the file history and to find the name of the attorney at the signature line for an amendment or the signature line for the transmittal letter for the case. If at the step 6018 the user enters the attorney's name, then at a step 6020 the system updates the attorney field 962 in the record 900 for the patent in the database 114. The completion of the attorney field 962 may optionally at a step 6019 initiate execution of a process 2200 for obtaining an attorney rating. The process 2200 is depicted in Fig. 26 and is connected to the flow chart 600 by off-page connector M. Upon completion of the process 2200, the attorney rating field 963 may be completed in the record 900 in a step 6021.

Next, at a step 6023, the user is prompted to enter whether an interview was conducted in the prosecution of the patent into an interview template 872, or to ask for help by clicking the help button 873 adjacent to the template 872. If the user asks for help, the user is sent to a help process, where the user is instructed, for example, to examine the file history and to look for an interview summary record. If at the step 6023 the user enters the answer, then at a step 6025 the system updates the interview field 972 in the record 900 for the patent in the database 114 to reflect the answer.

Next, at a step 6022, the system may execute a process 2300 for obtaining information as to the quality of references cited in prosecution. The process 2300 is depicted in Fig. 27, which is connected to the flow chart 600 by off-page connector N. The completion of the process 2300 results in completion at a step 6027 of the quality of references field 966 in the
Next, at a step 6024, the system may execute a process 2400 for obtaining information as to litigation results. The process 2400 is depicted in Fig. 28, which is connected to the flow chart 600 by off page connector O. The completion of the process 2400 results in completion of the litigation results field 966 in the record 900 for the patent at a step 6029.

Upon completion of the process 2400 at the step 6024, the system has completed the available fields for the record 900 for the patent in the database. Next, at a step 6028, the system may calculate a value for the patent based on all of the above factors, by entering the data from each of the fields into the value equation described above. The value calculation is further depicted in the process 1700, connected by off-page connector H to the process 600 of Figs. 11-11C.

Thus, a patent can be given a cardinal "score" or a group of patents so valued can be ordered in accord with their scores.

It should be understood that while the foregoing embodiment depicts completion of the various fields of the record 900 by a user visiting a site, some or all of these steps could be completed, or field values pre-computed, by a host or other party for a group of patents or for all patents. Thus, for example, a database of results could be established to permit searching of patents according to their value ranking on an industry-by-industry, or subject matter basis. It should also be understood that the steps could be accomplished in a different order, or that some, or even most, of the steps might be omitted in a particular embodiment.
PROCESS DESCRIPTIONS

Steps for obtaining a previous valuation are set forth in a flow chart 700, which is illustrated in Fig. 13 and which is connected to the flow chart 600 by off-page connector A. First, at a step 702, the system queries the database 114 to determine whether there exists a record having an identifier for the patent number of the patent being evaluated. If, at the step 702, the answer is no, the system returns to the flow chart 600, indicating that no current valuation exists. If at the step 702 the answer is yes, then at a step 703 the system retrieves the record for that patent from the database 114 and the user is offered the opportunity to view the valuation. Processing returns to the process 600 as indicated by a return through off-page connector A.

A term breadth calculator process is depicted in Fig. 15, which sets forth a flow chart 1100 for steps used to determine a term breadth rating. The term breadth rating process 1100 is connected to the flow chart 600 by off-page connector B, which is further described below. The term breadth calculator process 1100 may be used to provide a rating as to the relative breadth of the terms used in the claims. Various embodiments can be envisioned. For example, a user may simply review the independent claims and assign a rating from one to one hundred based on a general impression of whether the terms used are “broad terms,” resulting in a high rating, or “jargon,” resulting in a low rating. Optionally, a process 1100 may determine the frequency of use of the terms relative to the use of terms generally in the English language. For example, in a step 1102, the process may ask the user to type a claim into a template or similar input process. Next, at a step 1104, the process may, for each term in the claim, calculate the frequency with which each word in the claim is used, either in the English
language, or in a particular field. The frequency may be calculated relative to a term frequency database 1106, which may be of the type used in calculating term frequencies for a variety of known applications, such as term frequency search engines. At a step 1108, the term breadth process may then determine a selected number of the lowest frequency terms used in the claim. For example, the system might take the three least-used terms in the claim. Next, at a step 1110, the process may assign rating number to each of the selected terms. The rating number may represent a number between zero and one hundred, with one hundred being assigned to words of the highest frequency and zero being assigned to words of the lowest frequency. The scale might be linear or logarithmic, depending on the frequency distribution of the term database. Having assigned ratings to each of the selected terms, at a step 1112 the system may average the rating for these terms. The system may then in a step 1114 return the value to the process 600 for the term breadth field 924. A wide variety of statistical or subjective techniques can be envisioned for assessing the relative breadth of terms used in a patent claim as would be recognized by one of ordinary skill in the art.

Next, at a step 658, the system may execute a process 1200, as depicted on Fig. 16, which is connected by off-page connector C to the flow chart 600. The process 1200, described below, generates a law firm rating from the law firm name field 928 and enters the rating into the law firm rating field 929. Law firm ratings may be performed objectively or subjectively, by a wide range of techniques. Law firm ratings may be used as an input to the value equation in the process 600, or for a wide range of other reasons. For example, users may wish to know a rating for selection of a law firm, for evaluation of the opposing law firm in a litigation or business deal, for consideration of an employment opportunity, or the like. Thus, the law firm rating process 1200 may be used for these and any other purposes for which a rating for a law firm is desired.
Optionally, a law firm process 1200 may consist of assigning a rating, LFR, to the law firm. Rating a law firm may be based on a variety of factors. Factors that contribute to a rating may consist of SZ, the size of the law firm, LC, the location of the law firm, a rating LCR for the location, NA, the number of attorneys at the law firm, NP, the number of registered patent attorneys and agents at the law firm, LS, the rate of success of the law firm in litigation, LSP, the rate of success of the law firm in patent litigation, RAL, the rate of patent allowances per attorney or patent agent for the law firm, CR, the rating of the law firm by a set of clients, BR, the rating of the law firm by professionals at other law firms, and many other factors. In embodiments, some of these factors might be deleted, or other factors might be substituted. For example, the rating might consist solely of the rating by clients.

By way of example, a value equation can be established for rating the law firm, as follows:

\[ LFR = CC \times SZ + DD \times LC + EE \times LCR + FF \times NA + GG \times NP + HH \times LS + II \times LSP + JJ \times RAL + KK \times CR + LL \times BR \]

The various constants consist of weighting factors for the various variables, permitting normalization of different weighting factors, as well as adjustment of the rating system to account for learning or fitting of the equation to accepted ratings. As with the overall patent valuation equation described herein, the rating system may be optimized with econometric techniques, such as least-squares regression analysis.
To achieve a rating of a law firm in the process 1200, the system may, at a step 1202, request input of the law firm name 1204 into a name template 1205. The name field 1206 can be used, in a step 1207, as an identifier for storing a record 1208 with the data used to generate the law firm rating.

The system may, at a step 1210, request entry of SZ, the size of the law firm, either in total personnel, or in legal professionals into a size template 1211. Upon entry, at a step 1212 the system updates the record 1208 by completing a size field 1214.

A help process may be associated with each step of the process 1200, to assist the party entering the data. Data entry might be automated, or it might be accomplished by the host 104, the requester 102 or another party.

Next, the system may, at a step 1216, request entry of LC, the location of the law firm into a law firm location template 1218. Upon entry, at a step 1220 the system may update the record 1208 by completing a location field 1222. The location field 1222 may then, at a step 1224, generate a rating LCR associated with the location, which may be included in a location rating field 1228 in the record 1208. The location rating may be created objectively or subjectively. For example, a variety of factors, such as the number of attorneys in the city of location, the size of the patent bar in the city, client ratings for the location, and the like, can be used to assign a location rating to each city. Thus, the location rating may be generated from a multi-factor equation, as are other ratings disclosed herein.

Next, the system may, at a step 1230, request entry of NA, the number of attorneys in the law firm into an attorney number template 1232. Upon entry, at a step 1234 the system
may update the record 1208 by completing an attorney number field 1236.

Next, the system may, at a step 1238, request entry of NP, the number of registered patent attorneys or agents in the law firm into a registered agent template 1240. Upon entry, at a step 1242 the system may update the record 1208 by completing a registered agent field 1244.

Next, the system may, at a step 1248, request entry of LS, the rate of success of the firm in litigation, into a litigation success template 1250. The rate of success may be stored in a database 1252 that can be updated to reflect litigation success rates for firms. Upon entry or retrieval of the rate of success into the template 1250, at a step 1252 the system may update the record 1208 by completing a litigation success field 1254.

Next, the system may, at a step 1258, request entry of LSP, the rate of success of the firm in patent litigation, into a patent litigation success template 1260. The rate of success may be stored in a database 1262 that can be updated to reflect patent litigation success rates for firms. Upon entry or retrieval of the rate of success into the template 1260, at a step 1262 the system may update the record 1208 by completing a patent litigation success field 1264.

Next, the system may, at a step 1268, request entry of RAL, the rate of patent allowances per patent attorney or patent agent in the firm into an allowance rate template 1270. The rate of allowance may be obtained from public sources, such as the databases maintained by IP Today magazine, or other sources. Upon entry or retrieval of the rate of success into the template 1270, at a step 1272 the system may update the record 1208 by completing a rate of allowance field 1274.
Referring to Fig. 16A, next, the system may, at a step 1278, request entry of CR, the rating for the firm by clients, into a client rating template 1280. The rating CR may be obtained by a variety of mechanisms, such as by conducting surveys, by asking clients to complete evaluations when they enter an Internet site, or the like. Ratings may be stored in a client ratings database 1282 and may be retrieved in a step 1284 for entry into a client rating field 1288.

Next, the system may, at a step 1290, request entry of BR, the rating for the firm by other professionals, into a professional rating template 1292. The rating BR may be obtained by a variety of mechanisms, such as by conducting surveys, by asking professionals to complete evaluations when they enter an Internet site, or the like. Ratings may be stored in a professional ratings database 1294 and may be retrieved in a step 1298 for entry into a professional rating field 1299.

Upon completion of the various factors, the system may, at a step 1297, retrieve the various values from the fields of the record 1208 and calculate a rating for the law firm. The rating may be scaled so as to provide a rating from one to one hundred, or the like, so that it can be used for various purposes, including as an input to the process 600, with the connection indicated by off-page connector C.

The value for the filing date may be obtained in a process 1300 through a look-up table or the like. The process 1300 is depicted in Fig. 17 and is connected to the flow chart 600 by off-page connector D. The value for a filing date may be subject to various factors. For example, an early filing date provides better priority, so it is viewed as a positive factor.
(keeping in mind that the remaining term also depends on the filing date, but is treated as a separate variable in the value process 600). Thus, at a step 1301, the system may assign a positive value to the filing date field 938 that is larger the earlier the filing date. Also, a filing date before the effectiveness of the General Agreement on Tariffs and Trade, because the user is entitled to the longer of twenty years from filing or seventeen years from issuance as the patent term, and because certain additional opportunities are given to pre-GATT filings in prosecution. Next, at a step 1302, the system may determine whether the filing date is pre-GATT and, in a step 1306, increment a filing date field 1304 by a predetermined value. A value of one to one hundred, for example, may be assigned, based on these and any other factors. Once the final value is determined, it may be entered into the filing date field 938 and processing may return to the process 600 as indicated by off-page connector D.

A process 1400 for determining a value for the remaining term is depicted in Fig. 18 and is connected to the flow chart 600 by off-page connector E. At a step 1402, the system checks to determine whether the date is a pre-GATT date. If so, then at a step 1404 the system determines the date that is seventeen years from issuance. Then, at a step 1408, the system determines the date that is twenty years from filing of the earliest application to which priority is claimed. Then, at a step 1410, the system compares the date determined at the step 1404 and the date determined at the step 1408 and selects the later of the two dates. Then at a step 1412, the system determines how much time remains between the current date and the date determined at the step 1410. If the filing date is determined at the step 1402 to be a post-GATT filing date, then the system at a step 1414 identifies the date that is twenty years from filing of the earliest application to which priority is claimed. Processing then proceeds to the step 1412 for calculating the remaining term. A value for the remaining term may be assigned, based on the amount of time, such as a rating between zero (for no remaining term) and one
hundred (for a long remaining term, e.g., seventeen years). The value might be different depending on the industry of the patent. Thus, at a step 1418, an industry factor may be obtained from an industry factor database 1420, which stores factors for late term patent value. Thus, a large industry factor might apply to biotechnology and pharmaceuticals, where the end of the term is typically very valuable, while a much lower factor would apply to a remaining term for computer software. The industry could be identified by reference to the class/sub-class combination entered in the process 600, or it could be requested of the user at the time of completion of the process 1400. Upon completion, the process 1400 may return to the process 600, as indicated by off-page connector E. The system may then complete the remaining term field 940 in the record 900 of the database 114.

The process 1500 for determining the layers of protection is depicted in a flow chart 1500 of Fig. 19 that is connected to the flow chart 600 by off-page connector F. The layers of protection variable is intended to serve as a proxy for the presence of claims having varying scope. Claims of varying scope are beneficial in that they provide alternative positions in litigation, so that if a broad claim is found invalid, the narrower claim may nevertheless be found valid. Also, having claims of varying scope requires additional analysis on the part of potential infringers, making the patent a greater deterrent to competition. To determine an approximate number of layers of protection (i.e., different levels of claim scope), first, at a step 1502, the system requests input of the number of dependent claims that depend from the first independent claim. Next, at a step 1504, the system queries whether there are any multiple dependent claims that depend from the first independent claim. If so, then at a step 1506, the system increments the value obtained at the step 1502 by the total number of claims to which the multiple dependent claims refer. If at the step 1504 there are no multiple dependent claims, or upon completion of the step 1506, processing proceeds to a step 1507, where it is
determined whether there are additional independent claims. If so, processing returns to the step 1502, but the counting applies to dependent claims that depend from the next previously uncounted independent claim. This cycle of steps 1502-1507 is repeated, incrementing the number with each count, until all claims are counted and a value for the layers of protection is determined. Upon return from the process 1500, then at a step 678 the system updates the layers of protection field 944 in the record 900 in the database 114.

Optionally, other proxies may exist for the layers of protection; for example, the layers of protection might be counted as the longest chain of claims that depend in turn from each other. Other ways of determining the extent of variation of claim scope are ascertainable by those of ordinary skill in the art and are encompassed by the present disclosure.

Optionally, the process 1600 determines litigation frequency for patents in a subject matter area or class/sub-class combination. The process 1600 is depicted in Fig. 20, which is connected to the flow-chart 600 by off-page connector G. The steps of the process 1600 may be computed off line and included in a litigation frequency database 1602 that is maintained as additional litigation results are found. To construct the database, first, at a step 1604, the host 104 or other party may identify patent litigation results. Next, at a step 1608, the host 104 or other party may determine the patents in question in each of the patent law suits. Next, at a step 1610, the primary class/sub-class combination of each patent in question may be determined. Next, at a step 1612, the number of patents assigned to that primary class/sub-class combination may be determined. Next, at a step 1614, the number found at the step 1610 may be divided by the number found at the step 1612, to determine a frequency of litigation per patent in each class/subclass combination. Next, at a step 1618, the frequencies may be placed on a scale, so that a rating can be assigned to each class/sub-class combination,
such as a rating from one to one hundred, with high litigation frequency classes being assigned a high number and low litigation frequency classes being assigned a low number. Upon completion of the step 1618, at a step 1620 the rating for the class/sub-class combination of the patent in question can be entered into litigation frequency field 966 for the record 900 for the patent in the database 114 in the process 600.

It should be understood that the litigation frequency rating could be used for a variety of other purposes, such as to evaluate the likelihood that any particular patent would be litigated, or the likelihood that a client in a particular industry will be the subject of a patent suit. These and any other uses of a litigation frequency rating are encompassed by the present disclosure.

It should also be understood that a variety of other techniques are available for assigning a litigation frequency rating. For example, a rating could be determined subjectively or objectively by industry or subject-matter, rather than by class/sub-class combination. For example, a general perception might exist that the medical device industry is relatively litigious, at least with respect to patent suits, while the computer software industry does not typically get involved in patent suits. These perceptions may optionally be translated into litigation frequency ratings and used as proxies for completion of the litigation frequency field 966.

The process 1800 for determining the assignee is depicted in Fig. 21 and is connected to the flow chart 600 by off-page connector I. At a step 1802 the system contacts a database of assignee records, such as the USPTO database. The step may be accomplished through the USPTO web site, or through any other connection to the database. At a step 1804, the system
queries the database for the assignee records for the patent number in question. At a step 1808 the system retrieves the record and delivers it to the process 600, as indicated by off-page connector I, for completion of the assignee field 954 in the record 900 for the patent in the database 114.

The process 1900 for obtaining information for completion of the assignee portfolio field 955 is depicted in Fig. 22, which is connected to the flow chart 600 by off-page connector J. First, at a step 1902, the system contacts a database of assignee records, such as the USPTO database. Next, at a step 1904, the system queries the database for the number of patents assigned to the first assignee of the patent in question identified in the process 1800 and at a step 1905 increments the value of an assignee portfolio variable OPA by the amount of that number. Next, at a step 1908, the system queries whether there are additional assignees. If not, then the system returns the number obtained at the step 1905 for completion of the assignee portfolio field 955 with the current value of OPA. If there are additional assignees, then the steps 1902-1905 are repeated for the next assignees, incrementing OPA each time with the number of patents of the additional assignee. The system continues until there are no further assignees, as determined at the step 1908. The total number of patents determined at all cycles, OPA, is then included in the assignee portfolio field 955 of the process 600.

Optionally, the system could assign a value to OPA that consists of the sum of the valuations of the patents (as determined by a process similar to the process 600), rather than of the simple number of patents held by the assignee. Other methods of assigning a value to an assignee portfolio, whether subjective or objective could be envisioned by one of ordinary skill in the art and are encompassed herein. For example, a value could be assigned based on
the net revenues, net worth, or other characteristics of the assignee.

The process 2000 for determining the inventors is depicted in Fig. 23 and is connected to the flow chart 600 by off-page connector K. At a step 2002 the system contacts a database of inventor records, such as the USPTO database. The step may be accomplished through the USPTO web site, or through any other connection to the database. At a step 2004, the system queries the database for the inventor records for the patent number in question. At a step 2008 the system retrieves the record and delivers it to the process 600, as indicated by off-page connector K, for completion of the inventor field 958 in the record 900 for the patent in the database 114.

The process 2100 for obtaining information for completion of the inventor portfolio field 959 is depicted in Fig. 24, which is connected to the flow chart 600 by off-page connector L. First, at a step 2102, the system contacts a database of inventor records, such as the USPTO database. Next, at a step 2104, the system queries the database for the number of patents naming as an inventor the first inventor listed on the patent in question identified in the process 2000 and at a step 2105 increments the value of an inventor portfolio variable OPI by the amount of that number. Next, at a step 2108, the system queries whether there are additional inventors. If not, then the system returns the number obtained at the step 2105 for completion of the inventor portfolio field 959 with the current value of OPI. If there are additional assignees, then the steps 2102-2105 are repeated for the next inventor, incrementing OPI each time with the number of patents of the additional inventor. The system continues until there are no further inventors, as determined at the step 2108. The total number of patents determined at all cycles, OPI, is then included in the inventor portfolio field 959 of the process 600.
Optionally, the system could assign a value to OPI that consists of the sum of the valuations of the patents (as determined by a process similar to the process 600), rather than of the simple number of patents on which the inventor is named. Other methods of assigning a value to an inventor portfolio, whether subjective or objective could be envisioned by one of ordinary skill in the art and are encompassed herein.

A process 1700 is depicted in Fig. 25, where the system calculates the value of the patent. At a step 1702, the system retrieves the values from each of the fields of the record 900. Next, at a step 1704, the system multiplies each field value from the record 900 by the relevant constant from the equation described above. Next, at a step 1708, the system returns the value found at the step 1704 as the value for the patent. The process 1700 is connected to the flow-chart 600 by off-page connector H. Optionally, the system may calculate certain sub-components of the value equation. For example, components relating to the scope of the claims might be grouped, and a sub-score for those components could be given. Similarly, factors related to the industry or class/sub-class combination could be grouped, as could factors related to the individuals associated with the case. Thus, in addition to an overall score, various sub-scores can be used to approximate certain aspects of the patent, down to the single variable level.

A process 2200 for obtaining an attorney rating is depicted in Fig. 26 and is connected to the flow chart 600 by off-page connector M. Attorney ratings may be performed objectively or subjectively, by a wide range of techniques. Attorney ratings may be used as an input to the value equation in the process 600, or for a wide range of other reasons. For example, users may wish to know a rating for selection of an attorney, for evaluation of the opposing attorney.
in a litigation or business deal, for consideration of the attorney for hiring or partnership purposes, or the like. Thus, the attorney rating process 2200 may be used for these and any other purposes for which a rating for an attorney is desired.

Optionally, an attorney process 2200 may consist of assigning a rating, AT, to the attorney. Rating an attorney may be based on a variety of factors. Factors that contribute to a rating may consist of SZA, the size of the attorney’s law firm, LCA, the location of the attorney’s office, a rating LCAR for the location, NAA, the number of attorneys at the attorney’s firm, NPA, the number of registered patent attorneys and agents at the attorney’s firm, LSA, the rate of success of the attorney in litigation, LSPA, the rate of success of the attorney in patent litigation, RLA, the yearly rate of patent allowances for the attorney, CRA, the rating of the attorney by a set of clients, BRA, the rating of the attorney by professionals at other attorneys, and many other factors. In embodiments, some of these factors might be deleted, or other factors might be substituted. For example, the rating might consist solely of the rating by clients.

By way of example, a value equation can be established for rating the attorney, as follows:

\[
AT = MM \times SZA + NN \times LCA + OO \times LCRA + PP \times NAA + QQ \times NPA + RR \times LSA + SS \times LSPA + TT \times RLA + UU \times CRA + VV \times BRA
\]

The various constants consist of weighting factors for the various variables, permitting normalization of different weighting factors, as well as adjustment of the rating system to account for learning or fitting of the equation to accepted ratings. As with the overall patent
valuation equation described herein, the rating system may be optimized with econometric techniques, such as least-squares regression analysis.

To achieve a rating of an attorney in the process 2200, the system may, at a step 2202, request input of the attorney name 2204 into a name field 2206. The name field 2206 can be used as an identifier for storing in a step 2207 a record 2208 with the data used to generate the attorney rating. The system may, at a step 2210, request entry of SZA, the size of the attorney’s law firm, either in total personnel, or in legal professionals into a size template 2211. Upon entry, at a step 2212 the system updates the record 2208 by completing a size field 2214.

A help process may be associated with each step of the process 2200, to assist the party entering the data. Data entry might be automated, or it might be accomplished by the host 104, the requester 102 or another party.

Next, the system may, at a step 2216, request entry of LCA, the location of the attorney’s office into an attorney location template 2218. Upon entry, at a step 2220 the system may update the record 2208 by completing a location field 2222. The location field 2222 may then, at a step 2224, generate a rating LCRA associated with the location, which may be included in a location rating field 2228 in the record 2208. The location rating may be created objectively or subjectively. For example, a variety of factors, such as the number of attorneys in the city of location, the size of the patent bar in the city, client ratings for the location, and the like, can be used to assign a location rating to each city. Thus, the location rating may be generated from a multi-factor equation, as are other ratings disclosed herein.
Next, the system may, at a step 2230, request entry of NAA, the number of attorneys in the attorney's firm into an attorney number template 2232. Upon entry, at a step 2234 the system may update the record 2208 by completing an attorney number field 2236.

Next, the system may, at a step 2238, request entry of NPA, the number of registered patent attorneys or agents in the attorney's firm into a registered agent template 2240. Upon entry, at a step 2242 the system may update the record 2208 by completing a registered agent field 2244.

Next, the system may, at a step 2248, request entry of LSA, the rate of success of the attorney in litigation, into a litigation success template 2250. The rate of success may be stored in a database 2252 that can be updated to reflect litigation success rates for firms. Upon entry or retrieval of the rate of success into the template 2250, at a step 2252 the system may update the record 2208 by completing a litigation success field 2254.

Next, the system may, at a step 2258, request entry of LSPA, the rate of success of the attorney in patent litigation, into a patent litigation success template 2260. The rate of success may be stored in a database 2262 that can be updated to reflect patent litigation success rates for attorneys. Upon entry or retrieval of the rate of success into the template 2260, at a step 2262 the system may update the record 2208 by completing a patent litigation success field 2264.

Next, the system may, at a step 2268, request entry of RLA, the rate of patent allowances per year for the attorney into an allowance rate template 2270. The rate of
allowance may be obtained by querying attorneys, or by assigning the attorney a number corresponding to the mean number of allowance for attorneys at the attorney’s firm, perhaps adjusted for seniority, based on information from public sources, such as the databases maintained by IP Today magazine, or other sources. Upon entry or retrieval of the rate of success into the template 2270, at a step 2272 the system may update the record 2208 by completing a rate of allowance field 2274.

Next, the system may, at a step 2278, request entry of CRA, the rating for the attorney by clients, into a client rating template 2280. The rating CRA may be obtained by a variety of mechanisms, such as by conducting surveys, by asking clients to complete evaluations when they enter an Internet site, or the like. Ratings may be stored in a client ratings database 2282 and may be retrieved in a step 2284 for entry into a client rating field 2288.

Next, the system may, at a step 2290, request entry of BRA, the rating for the firm by other professionals, into a professional rating template 2292. The rating BRA may be obtained by a variety of mechanisms, such as by conducting surveys, by asking professionals to complete evaluations when they enter an Internet site, or the like. Ratings may be stored in a professional ratings database 2294 and may be retrieved in a step 2298 for entry into a professional rating field 2299.

Upon completion of the various factors, the system may, at a step 2297, retrieve the various values from the fields of the record 2208 and calculate a rating for the attorney. The rating may be scaled so as to provide a rating from one to one hundred, or the like, so that it can be used for various purposes, including as an input to the process 600, with the connection indicated by off-page connector M. Thus, upon completion of the process 2200, the attorney
rating field 963 may be completed in the record 900.

The process 2300 for determining the quality of the references is depicted in Fig. 27, which is connected to the flow chart 600 by off page connector N. First, in a step 2302, which may be accomplished off line, a database may be established for determining which references are cited most frequently in each class/sub-class combination or subject matter area. Next, at a step 2304, the database can rank all references according to the number of times they are cited, on a scale, such as a scale from one to one hundred, with frequently cited references being given higher numbers on the scale. Next, at a step 2308, the system may request entry of identifying information for each of the references cited in prosecution of the patent being valued in the process 600. In the case of patents, this may consist of the patent number. For publications, it may consist of the title and author. Next at a step 2310, the system may calculate a score for the patent, consisting of the average score of the cited references. The average at the step 2310 may be based on the highest five references cited (or fewer references, if fewer are present), so that the presence of a large number of irrelevant references does not diminish the average unnecessarily. A high score at the step 2310 indicates that important (i.e., frequently cited) references have been cited in prosecution, while a low score indicates that relatively obscure references have been cited. The citation of important references, i.e., a high score, can be considered a proxy for the quality of prosecution; that is, with a high score, it is less likely that an important reference was missed by the examiner, presenting vulnerability in litigation. Conversely, a low score suggests a higher likelihood that a new reference will be brought out in litigation. The completion of the process 2300 results in completion of the quality of references field 966 in the record 900 for the patent with the value obtained at the step 2310.
The optional process 2400 for determining litigation results is depicted in Fig. 28, which is connected to the flow chart 600 by off page connector O. At a step 2402, the system searches litigation records to determine whether the patent has been litigated. Such records may include LEXIS/NEXIS or WESTLAW databases, or other public information databases. If at the step 2402 it is determined that the patent has not been litigated, then the process 2400 returns a value of zero to the process 600. If at the step 2402 it is determined that the patent has been litigated, then it is determined whether the patent was held valid at a step 2404. If so, then at a step 2408 the variable LIT is given a positive value of a predetermined amount. If not, then at a step 2410 the variable LIT is given a negative value of a predetermined amount. If validity was not in question, no value is applied to LIT. Next, at a step 2412, it is determined whether the patent was held infringed. If so, then at a step 2414 the variable LIT is incremented in a positive fashion by a predetermined amount. If the patent was found not infringed, then at a step 2418 the variable LIT may be decremented by a predetermined amount. If infringement was not in question, no change is made to the LIT variable. Upon completion of the step 2414 or 2418, processing is returned to the process 600, as indicated by off-page connector O, which results in completion of the litigation results field 966 in the record 900 for the patent.

Optionally, additional information can be added to the LIT variable, such as information as to the value of the litigation and the results of other issues in litigation. Other embodiments for encompassing the effect of litigation on the value of a patent would be understood by those of ordinary skill in the art and are encompassed herein.
DEADLINE PATENT SERVICES

Provided herein is a system for meeting a deadline that depends on the date of filing with a government office that accepts facsimile transmissions. The system may include a server 5000, connected to a network 5002. The server 5000 may be located in a time zone west of the time zone in which a document to be filed is prepared. The server 5000 may receive documents via the network 5002 according to any conventional protocol, such as the TCP/IP protocol. The server 5000 may include a process 5004 for preparing a facsimile transmission of a document 5008. The server 5000 may apply a certificate of facsimile transmission 5012 to the document 5008 and prompt an agent to apply a signature 5010 to said certificate 5012. The server may also include a process 5014 for submitting the document 5004 to the government office. Thus, an individual on the East coast of the United States may send the document after the midnight deadline for a filing to the server 5000, which will generate the document, with an appropriate certificate, for filing by an agent located in a time zone where the deadline has not passed. In an embodiment, the server 5000 may be located in Hawaii.

In an embodiment, the server 5000 may apply a certificate of mailing 5016 in addition to, or in lieu of, the facsimile certificate 5012. In that case, the server 5000 may include a process 5018 for prompting an agent to submit the document with the United States postal service.

It will be apparent to one of ordinary skill in the art of computer science or electronic commerce that certain modifications, additions and subtractions can be made to the above-described embodiment without departing from the scope thereof.
What has been described in detail herein above are methods and apparatus meeting all of the aforementioned objectives. As previously indicated, those skilled in the art will recognize that the foregoing description has been presented for the sake of illustration and description only. It is not intended to be exhaustive or to limit the invention to the precise from disclosed, and obviously many modifications and variations are possible in light of the above teaching.

While the invention has been disclosed in connection with the preferred embodiments shown and described in detail, various modifications and improvements thereon will become readily apparent to those skilled in the art. Accordingly, the spirit and scope of the present invention is to be limited only by the following claims.
CLAIMS

What is claimed is:

1. A method of evaluating a patent, comprising:

   establishing a plurality of factors that are observable from the text of the patent,
   without reference to the meaning thereof, the factors including at least one of a number
   of claims, a number of independent claims, a length of the shortest independent claim,
   a presence of the word “means” in the claims, a number of references cited in
   prosecution, a length of the specification, a law firm prosecuting the case, a filing date,
   an issue date, and a cross-reference to one or more related applications;

   assigning a value to one or more of the factors, based on the characteristics of a
   patent to be evaluated;

   assigning a weight to each of the factors to which a value is assigned;

   multiplying each weight times the factor to which it is assigned; and

   calculating the sum of products of the weights and the factors.

2. A method of claim 1, further comprising:

   establishing additional factors that are observable from a patent, including at least one
   of a presence of claims of different statutory construction, a presence of multiple
   embodiments in the figures, a presence of multiple embodiments in the specification, a use of
   broad terms in the claims, a thickness of the file history, a number of words added by
   amendment to the claims, a number of novelty rejections, a number of obviousness rejections,
   a number of other patents owned by the assignee, a number of other patents naming the
   inventors as inventors, a length in lines of remarks made in amendment, a rating for the
   attorney prosecuting the case, a litigation activity frequency for patents in the class/sub-class
   of the patent, a quality of the references cited and a measurement of the layers of protection
offered by the patent;

assigning a value to one or more of the additional factors, based on the characteristics of a patent to be evaluated;

assigning an additional factor weight to each of the additional factors to which a value is assigned;

multiplying each additional factor weight times the additional factor to which it is assigned;

calculating the sum of products of the additional factor weights and the additional factors; and

adding the sum of the products of the additional factor weights and the additional factors to the products of the weights and the factors to obtain a patent valuation.

3. A method of rating a law firm, comprising:

establishing a plurality of factors that are observable about the law firm, the factors including at least one of a size of the law firm, a location of the law firm, a rating for the location, a number of attorneys at the law firm, a number of registered patent attorneys and agents at the law firm, a rate of success of the law firm in litigation, a rate of success of the law firm in patent litigation, RAL, a rate of patent allowances per attorney or patent agent for the law firm, a rating of the law firm by a set of clients, and a rating of the law firm by professionals at other law firms;

assigning a value to one or more of the factors, based on the characteristics of the law firm;

assigning a weight to each of the factors to which a value is assigned;

multiplying each weight times the factor to which it is assigned; and
calculating the sum of products of the weights and the factors to obtain a rating for the law firm.

4. A method of rating a legal professional, comprising:

   establishing a plurality of factors that are observable about the professional, the factors including at least one of a size of the professional’s law firm, a location of the professional’s office, a rating for the location, a number of professionals at the professional’s law firm, a number of registered patent professionals and agents at the professional’s law firm, a rate of success of the law firm in litigation, a rate of success of the law firm in patent litigation, a rate of patent allowances for the professional, a rating of the professional by a set of clients, and a rating of the professional by professionals at other law firms;

   assigning a value to one or more of the factors, based on the characteristics of the professional;

   assigning a weight to each of the factors to which a value is assigned;

   multiplying each weight times the factor to which it is assigned; and

   calculating the sum of products of the weights and the factors to obtain a rating for the professional.

5. A system for meeting a deadline that depends on the date of filing with a government office that accepts facsimile transmissions, comprising:

   a server, connected to a network, for receiving via the network a document to be filed, the server located in a time zone west of the time zone of the time zone in which the document is prepared,
a process of said server for preparing a facsimile transmission of the document;
a process of said server for applying a certificate of facsimile transmission to document
and prompting an agent to apply a signature to said certificate; and
a process of said server for submitting the document to the government office.

6. A system for meeting a deadline that depends on the date of filing with the United
States postal service, comprising:
a server, connected to a network, for receiving via the network a document to be filed
with the postal service, the server located in a time zone west of the time zone of the time
zone in which the document is prepared,
a process of said server for preparing a certificate of mailing for the document;
a process of said server for applying a certificate of mailing to the document and
prompting an agent to apply a signature to said certificate; and
a process of said server for prompting the agent to deliver the document to the United
States postal service.

7. A method of determining the breadth of a patent claim, without reference to the meaning
of the claim, comprising:
establishing a term frequency database consisting of statistics representing the
frequency of use of words within a set of words;
establishing scores corresponding to the frequencies established in the frequency
database;
assigning term scores to each of the terms, with high scores being assigned to high
frequency words and low scores being assigned to low frequency words;
obtaining terms from a patent claim;

determining the term scores for a plurality of terms in the patent claim;

and calculating a term breadth score based on the term scores for the terms in the patent.

8. A method of claim 7, wherein term scores are calculated for a predetermined number of terms from the patent claims.

9. A method of claim 7, wherein the plurality of terms in the patent claim consist of the terms having the lowest term scores.

10. A method of claim 7, wherein calculating the term breadth score comprises summing the term scores for a predetermined number of terms of the patent claim.

11. A method for employing a wide area network to administer a search to a large arena of participants, comprising the steps of

   providing a server program for generating a mark-up language page signal having a information representative of a set of characteristics of an item to be identified by a participant in the search,

   allowing each participant in the search to employ a browser process to communicate with said server program through the network and to download said page signal from said server program,

   allowing each participant to submit an answer representative of an item identified by the respective participant as including one or more of the set of characteristics,

   generating a database containing information representative of each said answer signal, and

   awarding a prize to the participant that first identifies an item having the greatest number of characteristics set forth in the set of characteristics.
12. A method of claim 11, wherein the item is relevant to an item of intellectual property.
Welcome to INVALIDATE.COM, the Internet Reference Retrieval Service. Our mission is to provide the critical means for anonymously locating publications on a world-wide basis.

Before INVALIDATE.COM, searching for relevant disclosures could never be characterized in terms of "leaving no stone unturned". Most electronic databases contain only a fraction of the total information available in a publication. Moreover, no library or patent office could be expected to carry every available reference. Yet the fact remains that publications from anywhere in the world can affect the patentability of an invention. For example, a doctoral thesis in Chinese, sitting on the shelf in the library of the University of Beijing can invalidate a patent in the United States.

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- Learn how to collect the REWARD for finding a reference.
- Read the RULES for participating in the search.
- View the FAQs for frequently asked questions.
- Find out more about our SERVICES for anonymously advertising on our Website.
14. An inventory control and reporting system, comprising:
   a data input device having means for encoding information related to sequential transactions, each of
   the transactions having articles associated therewith, said information including transaction identity data
   and data relating to the transactions;
   a data processor including memory capable for recording said information, means for generating an inventory
   report and means for associating sequential transactions with unique indicia sequentially assigned to
   the transactions and for generating at least one report of said transactions, the unique indicia and the data
   relating to the transactions being reconcilable against
   one another;
   a printer operable under control of the data processor to
   generate a written record for each of the sequential
   transactions, the written record including optically
   detectable bar codes printed only in substantial coinci-
   dence with each said transaction and at least part of
   the written record bearing a portion to be attached to
   said articles and,
   at least one optical scanner for data communication with
   the data processor and operable to detect said bar
   codes on all articles passing a predetermined station.

The search request is for an inventory control and reporting system, or a publication describing one. The date of the reference must be prior to 1 January 1997. The inventory control system can be employed for retail drycleaners and is to include a data input keyboard having keys blocks corresponding to information for identification and calculation of processing costs of laundry articles to be cleaned, a data processor adapted to calculate pricing information and to generate reports based upon each data input, the processor being connected to a printer and the processor and printer producing sequential records of the records are generated by an dot matrix printer operating in a high resolution mode, the bar code portions being generated for a transaction contemporaneously with the transaction. The bar code tags are attached to articles of clothing and are used with scanning apparatus to facilitate generation of reports according to various management needs.
Figure 10

Dynamic Page Generator

HTML Structures

Page Processor

Query Module

Database Module

Browser

Database

Database

Database
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Fig. 14
Fig. 16A

CLIENT RATING?  

UPDATE CLIENT RATING

PROFESSIONAL RATING?

UPDATE PROFESSIONAL RATING

CALCULATE RATING

C

From Fig. 16

HELP

HELP

HELP

HELP

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1278

1284

1290

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INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) :G06F 17/30
US CL :702/81, 84; 707/1-6, 9, 10, 522
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. : 702/81, 84; 707/1-6, 9, 10, 522

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<td>US 5,623,681 A (RIVETTE et al) 22 April 1997 (22.04.97), Abstract, cols. 3-5, Figs. 1-71.</td>
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* Further documents are listed in the continuation of Box C.  ☐ See patent family annex.

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  "A" document defining the general state of the art which is not considered to be of particular relevance
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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

Date of the actual completion of the international search 08 AUGUST 2001

Date of mailing of the international search report 25 OCT 2001

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 MARC ROFF Telephone No. (703) 308-1677

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