

1 A further aspect of the invention is the use of the menus generated in accordance
 2 with the described technique to place orders from wireless remote handheld devices or from
 3 remote locations through the internet. The World Wide Web is a distributed hypermedia
 4 computer system that uses the internet to facilitate global hypermedia communication using
 5 specified protocols. One such protocol is the Hypertext Transfer Protocol (“HTTP”), which
 6 facilitates communication of hypertext. Hypertext is the combination of information and links to
 7 other information. In the context of the Web, hypertext is defined by the Hypertext Mark-up
 8 Language (“HTML”). The links or hyperlinks in a HTML document reference the locations of
 9 resources on the Web, such as other HTML documents. Another language used in creating
 10 documents for use on the Worldwide Web, to display on computer screens, or to create speech
 11 style sheets for use in, e.g., telephones, is the Extensible Mark-Up Language (“XML”). XML is
 12 a “metalanguage”, i.e., a language for describing languages which was developed to eliminate
 13 the restrictions of HTML.

14 The Web is a client-server system. The HTML documents are stored on Web
 15 server computers, typically in a hierarchical fashion with the root document being referred to as
 16 the home page. The client specifies a HTML document or other source on the server by
 17 transmitting a Uniform Resource Locator (“URL”) which specifies the protocol to use, e.g.,
 18 HTTP, the path to the server directory in which the resource is located, and filename of the
 19 resource. Users retrieve the documents via client computers. The software running on the user’s
 20 client computer that enables the user to view HTML documents on the computer’s video monitor
 21 and enter selections using the computer’s keyboard and mouse is known as a browser. The
 22 browser typically includes a window in which the user may type a URL. A user may cause a
 23 URL to be transmitted by typing it in the designated window on the browser or by maneuvering

1 the cursor to a position on the displayed document that corresponds to a hyperlink to a resource
 2 and actuating the mouse button. The latter method is commonly referred to simply as “clicking
 3 on the hot-spot” or “clicking on the hyperlink”. The hyperlink methodology is contemplated for
 4 use in accordance with the preferred embodiment to transmit orders via the internet.

5 Web server application software exists that enables a user to shop for and order
 6 merchandise. Such systems are sometimes referred to as electronic merchandising systems or
 7 virtual storefronts. Systems that enable a user to choose among several retailers’ goods are
 8 sometimes referred to as electronic malls. An electronic retailer’s or electronic mall operator’s
 9 Web server provides HTML forms that include images and descriptions of merchandise. The
 10 user may conventionally search for an item by entering a key word search query in a box on a
 11 form. When a user selects an item, the server may provide a linked form that describes that item
 12 in further detail. The user may also conventionally enter ordering information into boxes on the
 13 form, such as the type and quantity of the item desired. The information entered by the user is
 14 transmitted to the server. The user may select multiple items in this manner and then enter a
 15 credit card number to pay for the purchases. The retailer processes the transaction and ships the
 16 order to the customer. As can be appreciated, ordering merchandise can also be done from
 17 menus. The generation of menus of items or merchandise for sale over the internet is readily
 18 accomplished by the menu generation approach of the present invention.

19 Searching for items that the user is interested in purchasing is insufficient in prior
 20 merchandising systems. Database management programs use index searching to facilitate rapid
 21 searching of large amounts of data. The creator of the database may instruct the program to use
 22 specified fields in the database as indexed or key fields. The program locates all terms in the
 23 database that appear in the indexed fields and stores them in an index table. Each entry in the

1 index table includes a term and corresponding pointer to the location in the database where the
 2 term is found. If a user initiates a search for a term that is present in the index table, the program
 3 can locate the instances of that term in the database with exceptional speed. Users who are
 4 familiar with the particular database they are searching will generally know which fields are
 5 indexed and will know the format of the data in those fields. For example, a user of a database
 6 containing the inventory of a bookstore may know that users can search for the names of authors
 7 of books and that a user who wishes to do so should enter the author's last name first. A user
 8 having such knowledge will therefore be able to search efficiently. Users of electronic
 9 merchandising systems, however, are generally end-consumers who have no knowledge of a
 10 merchant's database. If, as is very likely, such a user initiates a search for a term that is not
 11 present in the index table, the program must sequentially search through all records in the
 12 database. Sequential records are typically linked by pointers. Using pointers in this manner is
 13 very demanding on server resources, resulting not only in an exceptionally slow search, but also
 14 creating a bottleneck for other processes that the server may be executing. The menu generation
 15 approach of the present invention can be used to create customized menus from a database that
 16 includes every item of merchandise the vendor has for sale. In this manner, customers can scan
 17 the generated menu much more readily than they could view the entire database and the
 18 necessity of having familiarity with the database is eliminated as well, reducing the need for
 19 resource intensive pointers.

20 While the preferred embodiment of the invention is for the generation of
 21 restaurant menus and the like, the broad scope of the invention is far greater. For example,
 22 menus generated in accordance with the invention can be used in the desktop computing
 23 environment in association with the operating system or application programs. One such use is

1 to facilitate the creation of user personalized file structures for general desktop use. Another use
 2 is to facilitate the location of customized menus from master menus for use in association with
 3 application software to make the execution of the application software more efficient by, e.g.,
 4 eliminating the necessity of querying or checking every tree branch in the master menu file
 5 structure in response to user input or other criteria and to create handheld/PDA compatible
 6 versions of the software.

7 While the preferred embodiment of the invention includes the selection of items
 8 from a master menu wherein the master menu is displayed using a graphical user interface, it is
 9 to be appreciated that any means for displaying the master menu to the user and generating
 10 another menu in response to and comprised of the selections made is encompassed by the
 11 contemplated invention. The invention encompasses the selection of nontextual symbols,
 12 characters, icons and the like, in addition to text, from a hierarchical tree menu or the like for
 13 generation of another menu comprised of such items.

14 It is also within the scope of the invention to generate menus automatically in
 15 response to predetermined criteria. For example, in the restaurant menu generation embodiment,
 16 a modified menu can be generated to comply with a particular specification or group of criteria
 17 such as, e.g., "dinner", "low cholesterol", "low fat", "fish", "chicken", or "vegetarian". In this
 18 embodiment, only items from the master menu that satisfy specified parameters will be included
 19 in the generated menu. The selection process could involve selection of master menu items
 20 based on tags or identifiers associated with the items or by checking every master menu item
 21 against a dictionary of items acceptable for inclusion in the modified menu. It should also be
 22 appreciated that the invention encompasses any combination of automatic and manual user
 23 selection of the items comprising the generated menu. For example, a user might specify criteria

1 which would further control automatic selection or the user could manually select some items
 2 with automatic selection of others. The menu generation aspect of the invention is equally
 3 applicable to table-based, drive-thru, internet, telephone, wireless or other modes of customer
 4 order entry, as is the synchronous communications aspect of the invention.

5 The inventive concept encompasses the generation of a menu in any context
 6 known to those skilled in the art where an objective is to facilitate display of the menu so as to
 7 enable selection of items from that menu. The restaurant menu generation embodiment is but
 8 one example of a use for the inventive concept. Likewise, displaying menus generated in
 9 accordance with the invention on PDAs and Web pages to facilitate remote ordering are but a
 10 few examples of ways in which such a menu might be used in practice. Any display and
 11 transmission means known to those skilled in the art is equally usable with respect to menus
 12 generated in accordance with the claimed invention.

13 In the more general situation, menus can be generated in accordance with the
 14 present invention in a variety of situations. For example, the usable file structure for a particular
 15 data processing application can be dictated by the user or an application program prior to or
 16 during the execution of the application program. Efficiencies with respect to computational
 17 speed and equipment, e.g., storage and processor, usage can thus be achieved along with the
 18 facilitation of display of the generated menu.

19 While the best mode for carrying out the preferred embodiment of the invention
 20 has been illustrated and described in detail, those familiar with the art to which the invention
 21 relates will recognize various alternative designs and embodiments which fall within the spirit of
 22 practicing the invention. The appended claims are intended to cover all those changes and
 23 modifications falling within the true spirit and scope of the present invention.

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1 That which is claimed is:

2 1. An information management and synchronous communications system for
3 generating menus comprising:

- 4 a. a central processing unit,
- 5 b. a data storage device connected to said central
6 processing unit,
- 7 c. an operating system including a graphical user
8 interface,
- 9 d. a first menu stored on said data storage device,
- 10 e. application software for generating a second menu
11 from said first menu,

12 wherein the application software facilitates the generation of the second menu by
13 allowing selection of items from the first menu, addition of items to the second menu and
14 assignment of parameters to items in the second menu using the graphical user interface of said
15 operating system and wherein data comprising the second menu is synchronized between the
16 data storage device connected to the central processing unit and at least one other computing
17 device.

18 2. An information management and synchronous communications system in
19 accordance with claim 1, wherein the second menu is a restaurant menu.

20 3. An information management and synchronous communications system in
21 accordance with claim 1, wherein the second menu is capable of being displayed on the display
22 screen of a wireless computing device.

23 4. An information management and synchronous communications system in
24 accordance with claim 3, wherein selections from the second menu are capable of being
25 transmitted to a receiving computer by wireless link.

1 5. An information management and synchronous communications system in
2 accordance with claim 1, wherein the second menu is capable of being displayed on display
3 screens of computers in a network.

4 6. An information management and synchronous communications system in
5 accordance with claim 5, wherein the computer network is the internet.

6 7. An information management and synchronous communications system in
7 accordance with claim 3, wherein selections from the second menu are capable of being
8 transmitted to a receiving computer via the internet.

9 8. An information management and synchronous communications system in
10 accordance with claim 1, wherein the second menu is created in conformity with hypertext
11 markup language or extensible markup language.

12 9. An information management and synchronous communications system in
13 accordance with claim 1, wherein the second menu overwrites the first menu.

14 10. The information management and synchronous communications system of
15 claim 1, wherein the first menu and the second menu are both capable of being displayed in the
16 same window on the display screen.

17 11. The information management and synchronous communications system of
18 claim 1, wherein the items comprising the second menu are a subset of the items comprising the
19 first menu.

20 12. An information management and synchronous communications system for
21 generating menus comprising:

- 22 a. a microprocessor,
- 23 b. a display device,
- 24 c. a data and instruction input device,

- 1 **d.** a data storage device for storing information and
- 2 instructions entered through said data and
- 3 instruction input means or information generated by
- 4 said microprocessor,

- 5 **e.** an operating system,

- 6 **f.** a master menu stored on said data storage device for
- 7 generating a modified menu, and

- 8 **g.** application software,

9 wherein said microprocessor, operating system and application software are operative to display
10 the master menu on the display device in response to instructions programmed into said
11 microprocessor, operating system, application software and information and instructions entered
12 through said data input device, and wherein said microprocessor, operating system and
13 application software are operative to create the modified menu from said master menu in
14 response to information and instructions entered through said data and instruction input device
15 and wherein data comprising the modified menu is synchronized between the data storage device
16 and at least one other computing device.

17 13. The information management and synchronous communications system of
18 claim 12, further comprising means for transferring the modified menu to a digital computing
19 device.

20 14. The information management and synchronous communications system of
21 claim 13, wherein the digital computing device is a wireless handheld device.

22 15. The information management and synchronous communications system of
23 claim 12, further comprising means for downloading the modified menu to the internet or a Web
24 page.

1 16. The information management and synchronous communications system of
2 claim 15, further comprising means for converting the modified menu to hypertext markup
3 language or extensible markup language.

4 17. The information management and synchronous communications system of
5 claim 15, wherein the items comprising the modified menu are a subset of the items comprising
6 the master menu.

7 18. An information management and synchronous communications system in
8 accordance with claim 12, wherein said operating system includes a graphical user interface and
9 wherein said microprocessor, operating system and application software are operative to generate
10 the modified menu by facilitating selection of items from said master menu using the graphical
11 user interface of said operating system.

12 19. An information management and synchronous communications system in
13 accordance with claim 12, wherein said master menu is organized in a hierarchical tree structure
14 having branches comprising menu items and wherein the modified menu is at least partially
15 generated by selecting items from the branches of the tree structure.

16
17
18 20. In a computer system having an input device, a storage device, a video
19 display, an operating system including a graphical user interface and application software, an
20 information management and synchronous communications method comprising the steps of:

- 21 a. outputting at least one window on the video display;
- 22 b. outputting a first menu in a window on the video
23 display;
- 24 c. displaying a cursor on the video display;

- 1 **d.** selecting items from the first menu with the input
- 2 device or the graphical user interface;
- 3 **e.** inserting the items selected from the first menu into
- 4 a second menu, the second menu being output in a
- 5 window;
- 6 **f.** optionally adding additional items not included in
- 7 the first menu to the second menu using the input
- 8 device or the graphical user interface;
- 9 **g.** storing the second menu on the storage device; and
- 10 synchronizing the data comprising the second menu between the storage device
- 11 and at least one other data storage medium, wherein the other data storage medium is connected
- 12 to or is part of a different computing device.

13 21. The method of claim 20, further comprising the step of transferring data or

14 instructions representative of the second menu to a remote digital device or Web page.

15 22. The method of claim 21, wherein said data or instructions representative

16 of the second menu are transferred by a wireless link.

17 23. The method of claim 20, wherein the selected items and optional

18 additional items are inserted into a second menu which is displayed in the same window as the

19 first menu.

20 24. The method of claim 21, comprising the further steps of selecting at least

21 one item from the second menu and transmitting at least one item selected to another computer.

22 25. The method of claim 24, wherein at least one item selected from the

23 second menu is transmitted to another computer by wireless link or the internet.

24 26. The method of claim 21, wherein the second menu is displayed on the

25 remote digital device or Web page in page format.

1 27. The method of claim 20, wherein the second menu overwrites the first
2 menu.

3 28. The method of claim 20, wherein the items comprising the second menu
4 are a subset of the items comprising the first menu.

5
6 29. An information management and synchronous communications system for
7 use with wireless handheld computing devices and hospitality computing systems comprising:

8
9 **a.** a central database containing hospitality
10 applications and data,

11 **b.** at least one wireless handheld computing device on
12 which hospitality applications and data are stored or
13 displayed,

14 **c.** an application program interface, and

15 **d.** a communications control module;

16
17 wherein applications or data are synchronized wirelessly between the central database and at
18 least one wireless handheld computing device and wherein the applications program interface
19 and communications control module establish a seamless link between the data in the central
20 database and the data on the wireless handheld computing device.

21 30. The information management and synchronous communications system of
22 claim 29 wherein the communications control module and the application program interface
23 enable the automatic generation of and updating of operator menus or screens on the handheld
24 computer based on data from the central hospitality database.

1 31. The information management and synchronous communications system of
2 claim 30 wherein messaging formats are used which are in conformity with HTML or XML
3 messaging formats.

4
5 32. An information management and synchronous communications system for use
6 with wireless handheld computing devices and hospitality applications comprising:

- 7 **a.** a central database containing hospitality
- 8 applications and data,
- 9
- 10 **b.** at least one wireless computing device,
- 11 **c.** at least one wireless paging or beeper device,
- 12 **d.** an applications program interface, and
- 13 **e.** a communications control module;

14
15 wherein hospitality applications or data are synchronized between the central database, at least
16 one wireless computing device and at least one wireless paging or beeper device and wherein
17 messaging to the wireless paging or beeper device is enabled directly from the operator interface
18 of the wireless computing device.

19 33. An information management and synchronous communications system
20 comprising:

- 21 **a.** a central database containing applications and data,
- 22 **b.** a first computing device associated with the central
- 23 database,
- 24 **c.** a second computing device associated with a second
- 25 storage medium containing applications and data,
- 26 **d.** an applications program interface, and
- 27 **e.** a communications control module;

1 wherein applications or data are synchronized between the central database and the second
2 storage medium and wherein the applications program interface and communications control
3 module establish a seamless link between the data in the central database and the data on the
4 second storage medium.

5 34. The information management and synchronous communications system of
6 claim 33 wherein the communications control module and the applications program interface
7 enable the automatic generation of and updating of operator menus or screens on the second
8 computing device based on data from the central database.

9 35. The information management and synchronous communications system of
10 claim 1 wherein the second menu is generated by manually selecting items from the first menu,
11 adding items to the second menu or assigning parameters to items in the second menu.

12 36. The information management and synchronous communications system of
13 claim 1 wherein the data is synchronized by digital transmission between the data storage device
14 connected to the central processing unit and at least one other computing device.

15 37. The information management and synchronous communications system of
16 claim 12 wherein the modified menu is generated by manually selecting items from the master
17 menu.

18 38. The information management and synchronous communications system of
19 claim 12 wherein the data is synchronized by digital transmission between the data storage
20 device and at least one other computing device.

21 39. The computer system of claim 20 wherein the data is synchronized by digital
22 transmission between the storage device and at least one other data storage medium.

1 40. The information management and synchronous communications system of
2 claim 29 wherein the applications or data are synchronized by digital data transmission between
3 the central database and at least one wireless handheld computing device.

4 41. The information management and synchronous communications system of
5 claim 32 wherein the applications or data are synchronized by digital data transmission between
6 the central database, at least one wireless computing device and at least one wireless paging or
7 beeper device.

8 42. The information management and synchronous communication system of
9 claim 29, 32, or 33 wherein the synchronized data relates to orders.

10 43. The information management and synchronous communication system of
11 claim 29, 32, or 33 wherein the synchronized data relates to waitlists

12 44. The information management and synchronous communication system of
13 claim 29, 32, or 33 wherein the synchronized data relates to reservations.

14 45. The information management and synchronous communication system of
15 claim 29 or 32 wherein the synchronized data is sent from at least one of the wireless computing
16 devices to a receiver at a valet parking base station.

17 46. The information management and synchronous communication system of
18 claim 29 or 32 wherein the synchronized data is sent from at least one of the wireless computing
19 devices to a wireless paging device.

20 47. The information management and synchronous communication system of
21 claim 33 wherein the synchronized data is sent from said second computing device to a receiver
22 at a valet parking base station.

1 48. The information management and synchronous communication system of
2 claim 33 wherein the synchronized data is sent from said second computing device to a wireless
3 paging device.

4 49. The information management and synchronous communication system of
5 claim 1 wherein said application software acts to facilitate generation of the second menu such
6 that the second menu is appropriate for a specified time of day.

7 50. The information management and synchronous communication system of
8 claim 1 wherein said application software further facilitates the generation of multiple menus,
9 each of said multiple menus being appropriate for a particular time of day.

10 51. The information management and synchronous communication system of
11 claim 1 wherein the facilitation of second menu generation by said application software takes
12 into account specified parameters, such that the second menu so generated includes items that
13 satisfy the specified parameters.

14 52. The information management and synchronous communication system of
15 claim 51 wherein the second menu so generated further includes manually selected items.

16 53. The information management and synchronous communication system of
17 claim 1 wherein the second menu is applicable to table-based customer ordering.

18 54. The information management and synchronous communication system of
19 claim 1 wherein the second menu is applicable to drive-through customer ordering.

20 55. The information management and synchronous communication system of
21 claim 1 wherein the second menu is applicable to customer ordering via internet .

22 56. The information management and synchronous communication system of
23 claim 1 wherein the second menu is applicable to customer ordering via telephone.

1 57. The information management and synchronous communication system of
2 claim 1 wherein the second menu is applicable to customer ordering via wireless device.

3 58. The information management and synchronous communication system of
4 claim 51 wherein said specified parameters involve recipe content.

5 59. The information management and synchronous communication system of
6 claim 12 wherein said microprocessor, operating system, and application software are further
7 operative to create said modified menu such that the modified menu is appropriate for a specified
8 time of day.

9 60. The information management and synchronous communication system of
10 claim 12 wherein said microprocessor, operating system, and application software are further
11 operative to create multiple menus, each of said multiple menus being appropriate for a
12 particular time of day.

13 61. The information management and synchronous communication system of
14 claim 12 wherein the creation of said modified menu by said microprocessor, operating system,
15 and application software takes into account specified parameters, such that the modified menu so
16 created includes items that satisfy the specified parameters.

17 62. The information management and synchronous communication system of
18 claim 61 wherein the modified menu so generated further includes manually selected items.

19 63. The information management and synchronous communication system of
20 claim 12 wherein the modified menu is applicable to table-based customer ordering.

21 64. The information management and synchronous communication system of
22 claim 12 wherein the modified menu is applicable to drive-through customer ordering.

1 65. The information management and synchronous communication system of
2 claim 12 wherein the modified menu is applicable to customer ordering via internet.

3 66. The information management and synchronous communication system of
4 claim 12 wherein the modified menu is applicable to customer ordering via telephone.

5 67. The information management and synchronous communication system of
6 claim 12 wherein the modified menu is applicable to customer ordering via wireless device.

7
8 68. The information management and synchronous communication system of
9 claim 61 wherein said specified parameters involve recipe content.

10 69. An information management and synchronous communications system for
11 generating and transmitting menus comprising:

- 12 a. a central processing unit,
- 13 b. a data storage device connected to said central
14 processing unit,
- 15 c. an operating system including a graphical user
16 interface,
- 17 d. a first menu consisting of menu categories, said menu
18 categories consisting of menu items, said first menu
19 stored on said data storage device and displayable in a
20 window of said graphical user interface in a hierarchical
21 tree format,
- 22 e. a modifier menu stored on said data storage device and
23 displayable in a window of said graphical user
24 interface,
- 25 f. a sub-modifier menu stored on said data storage device
26 and displayable in a window of said graphical user
27 interface, and
- 28 g. application software for generating a second menu from
29 said first menu and transmitting said second menu to a
30 wireless handheld computing device or Web page,

1 wherein the application software facilitates the generation of the second menu by
2 allowing selection of categories and items from the first menu, addition of menu categories to the
3 second menu, addition of menu items to the second menu and assignment of parameters to items
4 in the second menu using the graphical user interface of said operating system, said parameters
5 being selected from the modifier and sub-modifier menus, wherein said second menu is
6 applicable to a predetermined type of ordering.

7 70. The system of claim 69 wherein the type of ordering is table-based customer
8 ordering.

9 71. The system of claim 69 wherein the type of ordering is drive-through
10 customer ordering.

11 72. The system of claim 69 wherein the type of ordering is customer ordering via
12 internet.

13 73. The system of claim 69 wherein the type of ordering is customer ordering via
14 telephone.

15 74. The system of claim 69 wherein the type of ordering is customer ordering via
16 wireless device.

17 75. An information management and synchronous communications system for
18 generating and transmitting menus comprising:

- 19 a. a central processing unit,
- 20 b. a data storage device connected to said central processing unit,
- 21 c. an operating system including a graphical user interface,

- 1 **d.** a first menu consisting of menu categories, said menu categories
- 2 consisting of menu items, said first menu stored on said data storage device and displayable in a
- 3 window of said graphical user interface in a hierarchical tree format,
- 4 **e.** a modifier menu stored on said data storage device and displayable
- 5 in a window of said graphical user interface,
- 6 **f.** a sub-modifier menu stored on said data storage device and
- 7 displayable in a window of said graphical user interface, and
- 8 **g.** application software for generating a second menu from said first
- 9 menu and transmitting said second menu to a wireless handheld computing device or Web page,
- 10 wherein the application software facilitates the generation of the second menu by
- 11 allowing selection of categories and items from the first menu, addition of menu categories to the
- 12 second menu, addition of menu items to the second menu and assignment of parameters to items
- 13 in the second menu using the graphical user interface of said operating system, said parameters
- 14 being selected from the modifier and sub-modifier menus, wherein said application software acts
- 15 to facilitate generation of the second menu such that the second menu is appropriate for a
- 16 specified time of day.

17 76. An information management and synchronous communications system for

18 generating and transmitting menus comprising:

- 19 **a.** a central processing unit,
- 20 **b.** a data storage device connected to said central processing unit,
- 21 **c.** an operating system including a graphical user interface,

- 1 **d.** a first menu consisting of menu categories, said menu categories
- 2 consisting of menu items, said first menu stored on said data storage device and displayable in a
- 3 window of said graphical user interface in a hierarchical tree format,
- 4 **e.** a modifier menu stored on said data storage device and displayable
- 5 in a window of said graphical user interface,
- 6 **f.** a sub-modifier menu stored on said data storage device and
- 7 displayable in a window of said graphical user interface, and
- 8 **g.** application software for generating a second menu from said first
- 9 menu and transmitting said second menu to a wireless handheld computing device or Web page,
- 10 wherein the application software facilitates the generation of the second menu by
- 11 allowing selection of categories and items from the first menu, addition of menu categories to the
- 12 second menu, addition of menu items to the second menu and assignment of parameters to items
- 13 in the second menu using the graphical user interface of said operating system, said parameters
- 14 being selected from the modifier and sub-modifier menus, wherein said application software
- 15 further facilitates the generation of multiple menus, each of said multiple menus being
- 16 appropriate for a particular time of day.

17 77. An information management and synchronous communications system for

18 generating and transmitting menus comprising:

- 19 **a.** a central processing unit,
- 20 **b.** a data storage device connected to said central processing unit,
- 21 **c.** an operating system including a graphical user interface,

1 **d.** a first menu consisting of menu categories, said menu categories
2 consisting of menu items, said first menu stored on said data storage device and displayable in a
3 window of said graphical user interface in a hierarchical tree format,

4 **e.** a modifier menu stored on said data storage device and displayable
5 in a window of said graphical user interface,

6 **f.** a sub-modifier menu stored on said data storage device and
7 displayable in a window of said graphical user interface, and

8 **g.** application software for generating a second menu from said first
9 menu and transmitting said second menu to a wireless handheld computing device or Web page,

10 wherein the application software facilitates the generation of the second menu by
11 allowing selection of categories and items from the first menu, addition of menu categories to the
12 second menu, addition of menu items to the second menu and assignment of parameters to items
13 in the second menu using the graphical user interface of said operating system, said parameters
14 being selected from the modifier and sub-modifier menus, wherein the facilitation of second
15 menu generation by said application software takes into account specified parameters, such that
16 the second menu so generated includes items that satisfy the specified parameters.

17 78. The information management and synchronous communication system of
18 claim 77 wherein said specified parameters involve recipe content.

19
20 79. An information management and synchronous communications system for
21 use with wireless handheld computing devices and the internet comprising:

22 **a.** a central database containing hospitality applications and data,

- 1 **b.** at least one wireless handheld computing device on which hospitality
- 2 applications and data are stored,
- 3 **c.** at least one Web server on which hospitality applications and data are
- 4 stored,
- 5 **d.** at least one Web page on which hospitality applications and data are
- 6 stored,
- 7 **e.** an application program interface, and
- 8 **f.** a communications control module,

9 wherein applications and data are synchronized between the central data base, at
10 least one wireless handheld computing device, at least one Web server and at least one Web
11 page; wherein the application program interface enables integration of outside applications with
12 the hospitality applications and wherein the communications control module is an interface
13 between the hospitality applications and any other communications protocol, wherein the
14 synchronized data relates to orders.

15 80. An information management and synchronous communications system for
16 use with wireless handheld computing devices and the internet comprising:

- 17 **a.** a central database containing hospitality applications and data,
- 18 **b.** at least one wireless handheld computing device on which
- 19 hospitality applications and data are stored,
- 20 **c.** at least one Web server on which hospitality applications and data
- 21 are stored,
- 22 **d.** at least one Web page on which hospitality applications and data
- 23 are stored,

1 e. an application program interface, and

2 f. a communications control module,

3 wherein applications and data are synchronized between the central data base, at
4 least one wireless handheld computing device, at least one Web server and at least one Web
5 page; wherein the application program interface enables integration of outside applications with
6 the hospitality applications and wherein the communications control module is an interface
7 between the hospitality applications and any other communications protocol, wherein the
8 synchronized data relates to waitlists.

9 81. An information management and synchronous communications system for
10 use with wireless handheld computing devices and the internet comprising:

11 a. a central database containing hospitality applications and data,

12 b. at least one wireless handheld computing device on which
13 hospitality applications and data are stored,

14 c. at least one Web server on which hospitality applications and data
15 are stored,

16 d. at least one Web page on which hospitality applications and data
17 are stored,

18 e. an application program interface, and

19 f. a communications control module,

20 wherein applications and data are synchronized between the central data base, at
21 least one wireless handheld computing device, at least one Web server and at least one Web
22 page; wherein the application program interface enables integration of outside applications with
23 the hospitality applications and wherein the communications control module is an interface

1 between the hospitality applications and any other communications protocol, wherein the
2 synchronized data relates to reservations.

3 82. The information management and synchronous communication system of
4 claim 79, 80, or 81 wherein the data is sent to a receiver at a valet parking base station.

5 83. The information management and synchronous communication system of
6 claim 79, 80, or 81 wherein the data is sent to a wireless paging device.

7 84. The method of claim 20 wherein said application software acts to facilitate
8 generation of the second menu such that the second menu is appropriate for a specified time of
9 day.

10 85. The method of claim 20 wherein said application software facilitates the
11 generation of multiple menus, each of said multiple menus being appropriate for a particular
12 time of day.

13 86. The method of claim 20 wherein said application software acts to facilitate
14 generation of the second menu, the taking into account specified parameters such that the second
15 menu so generated includes items that satisfy the specified parameters.

16 87. The method of claim 86 wherein the second menu so generated further
17 includes manually selected items.

18 88. The method of claim 20 wherein the second menu is applicable to table-based
19 customer ordering.

20 89. The method of claim 20 wherein the second menu is applicable to drive-
21 through customer ordering.

22 90. The method of claim 20 wherein the second menu is applicable to customer
23 ordering via internet .

1 91. The method of claim 20 wherein the second menu is applicable to customer
2 ordering via telephone .

3 92. The method of claim 20 wherein the second menu is applicable to customer
4 ordering via wireless device.

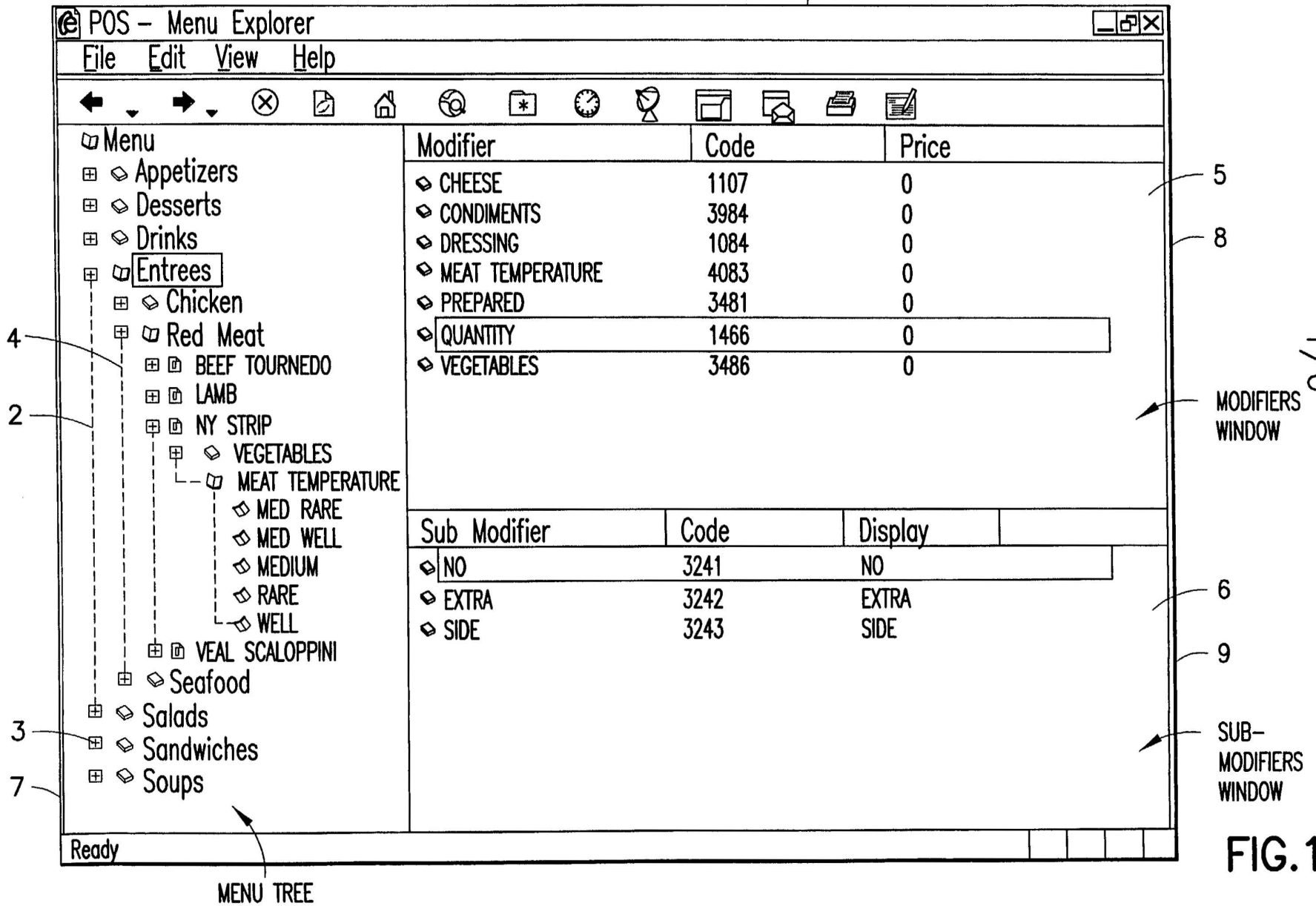
PETITIONERS' EXHIBIT

1 ABSTRACT

2 An information management and synchronous communications system and
3 method facilitates database equilibrium and synchronization with wired, wireless and Web-based
4 systems, user-friendly and efficient generation of computerized menus and reservations for
5 restaurants and other applications that utilize equipment with nonstandard graphical formats,
6 display sizes and/or applications for use in remote data entry, information management and
7 communication with host computer, digital input device or remote pager via standard hardwired
8 connection, the internet, a wireless link or the like.

9

1



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MODIFIERS WINDOW

SUB-MODIFIERS WINDOW

FIG. 1

The 'Modifier' dialog box (labeled 10) features a title bar with a close button (X). It contains four input fields: 'Long Name', 'Short Name', 'Code', and 'Price'. The 'Price' field is pre-filled with the number '0'. At the bottom, there are three buttons: 'OK', 'Cancel', and 'Browse'.

FIG.2

The 'Menu Category' dialog box (labeled 11) features a title bar with a close button (X). It contains two input fields: 'Long Name' and 'Short Name'. At the bottom, there are three buttons: 'OK', 'Cancel', and 'Browse'.

FIG.3

PETITIONERS' EXHIBIT 1007

Menu Item

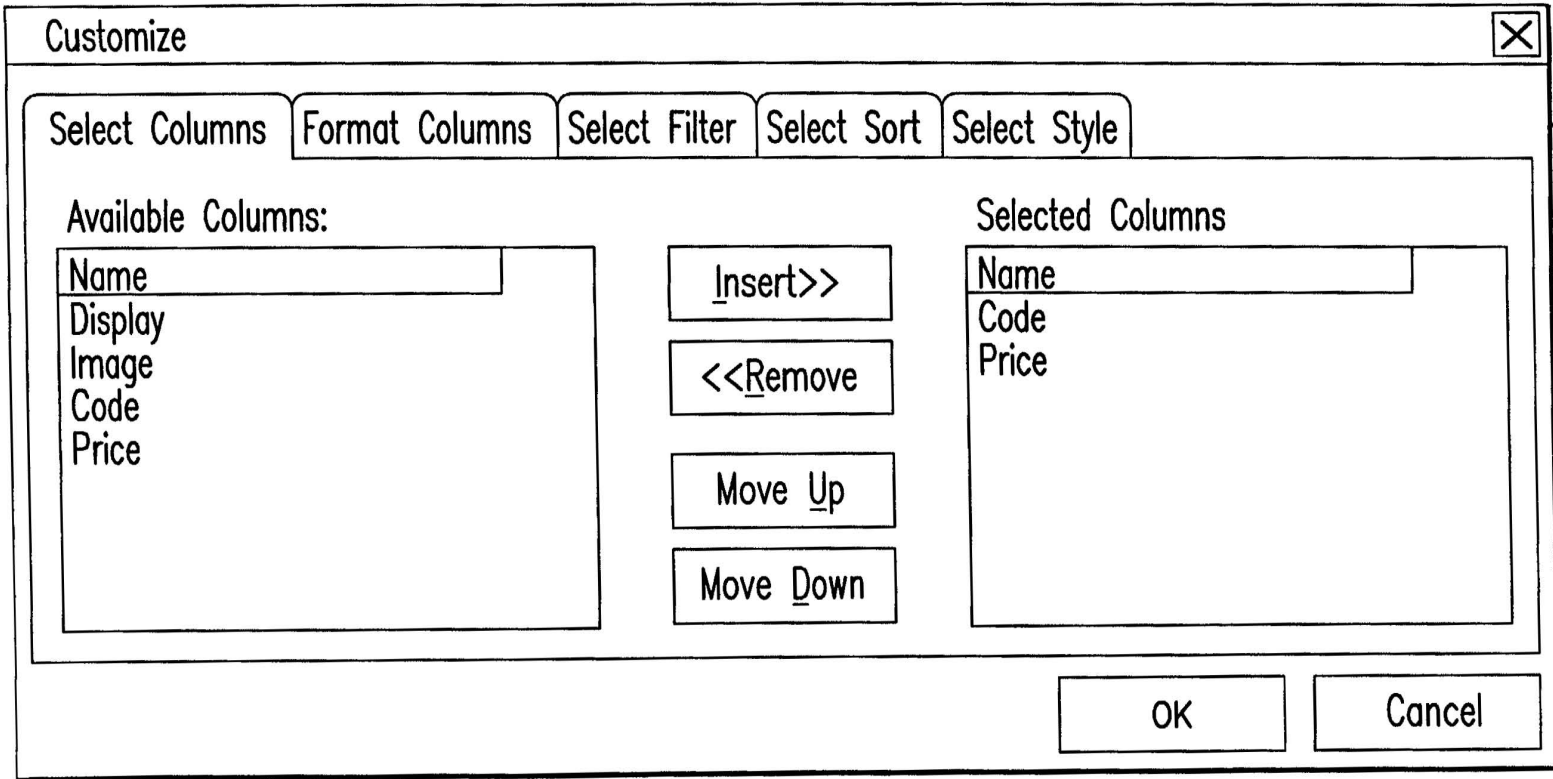
<u>Long Name:</u> Chicken Alaska	<u>Code:</u> 5612	
<u>Short Name:</u> ChxAls	<u>Price:</u> 12.95	<u>Prep. Time:</u> 12
<u>Recipe</u> Flame broiled brandy marinated Tender Chicken Breast topped with a creamy cilantro sauce. Served with steamed broccoli, carrots and zucchini. Spices include lemon pepper, paprika, ginger.		

OK Cancel Browse

12

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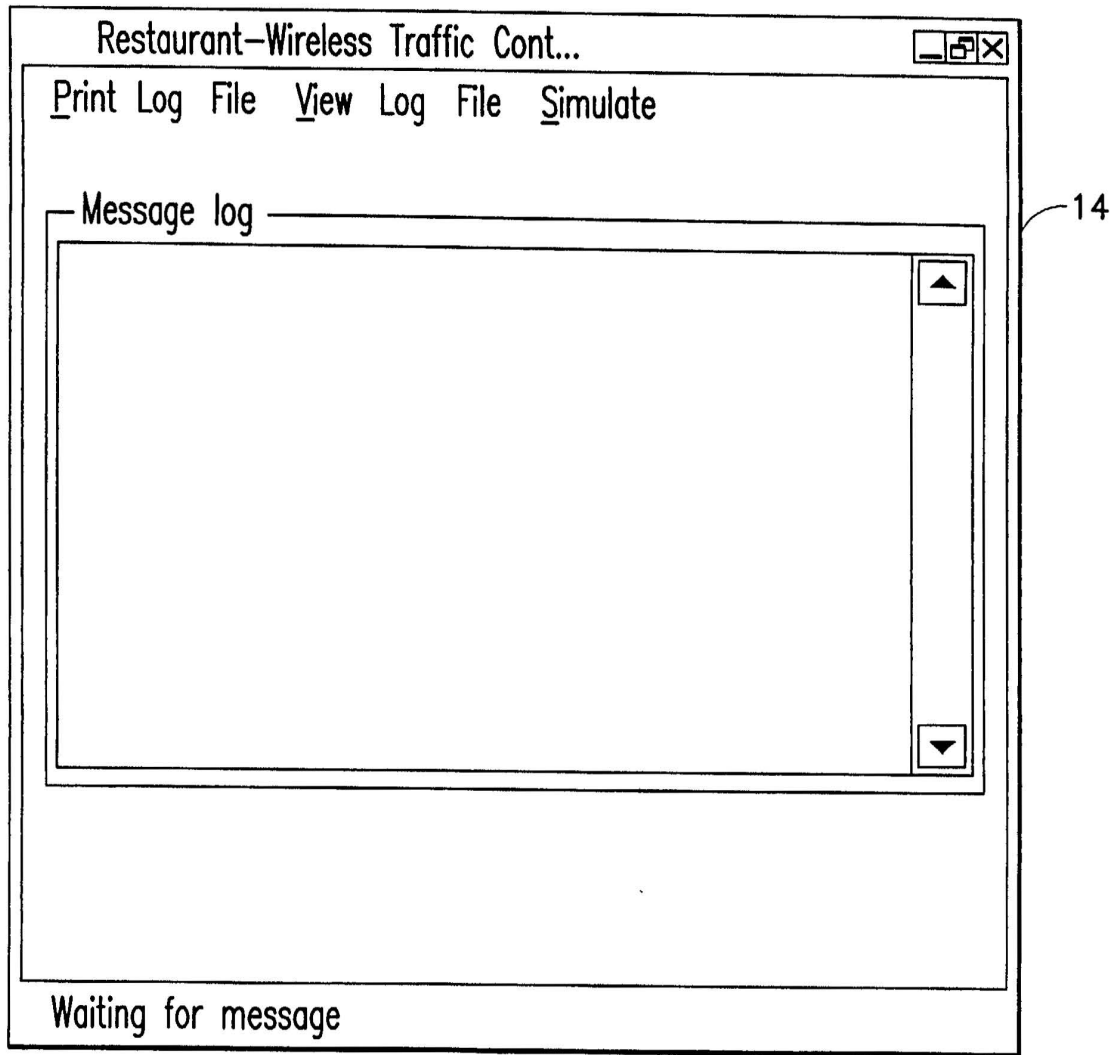
FIG.4



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FIG.5



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FIG. 6

POScE-System

Login CHECKS ORDER VIEW PAY

Choose Item: Tbl67 5st 2

App	Dessert	Drinks	Entrees
Salads	Sdwch	Soups	

Direction:

MAIN	PREV	PAGE	MODS
------	------	------	------

Select Guest to Order for:

1	2		
---	---	--	--

Last Selection

	REMOVE LAST
--	-------------

OK Cancel Browse

15

16

9/9

FIG.7

COMBINED DECLARATION AND POWER OF ATTORNEY FOR
ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL
DIVISIONAL, CONTINUATION OR CONTINUATION-IN-PART APPLICATION

As a below name inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

INFORMATION MANAGEMENT AND SYNCHRONOUS COMMUNICATIONS SYSTEM WITH MENU GENERATION

the specification of which

- a. [] is attached hereto
- b. [X] was filed on September 21, 1999 as application Serial No. 09/400,413 and was amended on _____ (if applicable).

PCT FILED APPLICATION ENTERING NATIONAL STAGE

- c. [] was described and claimed in International Application No. _____ filed on _____ and as amended on _____ (if any).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

I hereby specify the following as the correspondence address to which all communications about this application are to be directed:

SEND CORRESPONDENCE TO: MORGAN & FINNEGAN, L.L.P
 345 Park Avenue
 New York, N.Y. 10154

DIRECT TELEPHONE CALLS TO: _____
(212) 758-4800

[] I hereby claim foreign priority benefits under Title 35, United States Code § 119(a)-(d) or under § 365(b) of any foreign application(s) for patent or inventor's certificate or under § 365(a) of any PCT international application(s) designating at least one country other than the U.S. listed below and also have identified below such foreign application(s) for patent or inventor's certificate or such PCT international application(s) filed by me on the same subject matter having a filing date within twelve (12) months before that of the application on which priority is claimed:

[] The attached 35 U.S.C. § 119 claim for priority for the application(s) listed below forms a part of this declaration.

<u>Country/PCT</u>	<u>Application Number</u>	<u>Date of filing (day, month, yr)</u>	<u>Date of Issue (day, month, yr)</u>	<u>Priority Claimed</u>
				<input type="checkbox"/> YES <input type="checkbox"/> NO
				<input type="checkbox"/> YES <input type="checkbox"/> NO
				<input type="checkbox"/> YES <input type="checkbox"/> NO

I hereby claim the benefit under 35 U.S.C. § 119(e) of any U.S. provisional application(s) listed below.

<u>Provisional Application No.</u>	<u>Date of Filing (day, month, yr)</u>

ADDITIONAL STATEMENTS FOR DIVISIONAL, CONTINUATION OR CONTINUATION-IN-PART OR PCT INTERNATIONAL APPLICATION(S) (DESIGNATING THE U.S.)

I hereby claim the benefit under Title 35, United States Code § 120 of any United States application(s) or under § 365(c) of any PCT international application(s) designating the U.S. listed below.

<u>US/PCT Application Serial No.</u>	<u>Filing Date</u>	<u>Status (patented, pending, abandoned)/ U.S. application no. assigned (For PCT)</u>

In this continuation-in-part application, insofar as the subject matter of any of the claims of this application is not disclosed in the above listed prior United States or PCT international application(s) in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or Imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

I hereby appoint the following attorneys and/or agents with full power of substitution and revocation, to prosecute this application, to receive the patent, and to transact all business in the Patent and Trademark Office connected therewith: John A. Diaz (Reg. No. 19,550), John C. Vassil (Reg. No. 19,098), Alfred P. Ewert (Reg. No. 19,887),

David H. Pfeffer (Reg. No. 19,825), Harry C. Marcus (Reg. No. 22,390), Robert E. Paulson (Reg. No. 21,046), Stephen R. Smith (Reg. No. 22,615), Kurt E. Richter (Reg. No. 24,052), J. Robert Dailey (Reg. No. 27,434), Eugene Moroz (Reg. No. 25,237), John F. Sweeney (Reg. No. 27,471), Arnold I. Rady (Reg. No. 26,601), Christopher A. Hughes (Reg. No. 26,914), William S. Feiler (Reg. No. 26,728), Joseph A. Calvaruso (Reg. No. 28,287), James W. Gould (Reg. No. 28,859), Richard C. Komson (Reg. No. 27,913), Israel Blum (Reg. No. 26,710), Bartholomew Verdirame (Reg. No. 28,483), Maria C.H. Lu (reg. No. 29,323), Joseph A. DeGirolamo (Reg. No. 28,595), Michael P. Dougherty (Reg. No. 32,730), Seth J. Atlas (Reg. No. 32,454), Andrew M. Riddles (Reg. No. 31,657), Bruce D. DeRenzi (Reg. No. 33,676), Michael M. Murray (Reg. No. 32,537), Mark J. Abate (Reg. No. 32,527), Alfred L. Haffner, Jr. (Reg. No. 18,919), Harold Haidt (Reg. No. 17,509), John T. Gallagher (Reg. No. 35,516), Steven F. Meyer (Reg. No. 35,613) and Kenneth H. Sonnenfeld (Reg. No. 33,285) of Morgan & Finnegan, L.L.P. whose address is: 345 Park Avenue, New York, New York, 10154; and Edward A. Pennington (Reg. No. 32,588), Michael S. Marcus (Reg. No. 31,727) and John E. Hoel (Reg. No. 26,279) of Morgan & Finnegan, L.L.P., whose address is 1775 Eye Street, Suite 400, Washington, D.C. 20006.

[] I hereby authorize the U.S. attorneys and/or agents named hereinabove to accept and follow instructions from _____ as to any action to be taken in the U.S. Patent and Trademark Office regarding this application without direct communication between the U.S. attorneys and/or agents and me. In the event of a change in the person(s) from whom instructions may be taken I will so notify the U.S. attorneys and/or agents hereinabove.

Full name of sole or first inventor Keith R. McNally
 Inventor's signature* *Keith R. McNally* 10/25/99
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21567 Parvin Drive, Santa Clarita, CA 91350
 Citizenship USA
 Post Office Address _____

Full name of second joint inventor, if any William H. Roof
 Inventor's signature* *William H. Roof* 10/25/99
 Residence 13429 Lockett Court, San Diego, CA 92130 date
 Citizenship USA
 Post Office Address _____

Full name of third joint inventor, if any Richard Bergfeld
 Inventor's signature* *Richard Bergfeld* 10/25/99
 Residence 20719 Nashville ^{Street} Court, Chatsworth, CA 91311 date
 Citizenship USA

Post Office Address _____

[] ATTACHED IS/ARE ADDED PAGE(S) TO COMBINED DECLARATION AND POWER OF ATTORNEY FORM FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

* Before signing this declaration, each person signing must:

1. Review the declaration and verify the correctness of all information therein; and
2. Review the specification and the claims, including any amendments made to the claims.

After the declaration is signed, the specification and claims are not to be altered.

To the inventor(s):

The following are cited in or pertinent to the declaration attached to the accompanying application:

Title 37, Code of Federal Regulation, § 1.56

Duty to disclose information material to patentability.

(a) A patent by its very nature is affect with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is canceled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is canceled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in patent was cited by the Office or submitted to the Office in the manner prescribed by §§1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

- (1) prior art cited in search reports of a foreign patent office in a counterpart application, and
- (2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

Title 35, U.S. Code § 101

Inventions patentable

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Title 35 U.S. Code § 102

Conditions for patentability; novelty and loss of right to patent

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent,
- (b) the invention was patented or described in a printed publication in this or foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States, or
- (c) he has abandoned the invention, or
- (d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months before the filing of the application in the United States, or
- (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent, or
- (f) he did not himself invent the subject matter sought to be patented, or
- (g) before the applicant's invention thereof the invention was made in this country by another had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other ...

Title 35, U.S. Code § 103

Conditions for patentability; non-obvious subject matter

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed

invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Title 35, U.S. Code § 112 (in part)

Specification

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise and exact terms also enable any person skilled in the art to which it pertains, or with which it is mostly nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Title 35, U.S. Code § 119

Benefit of earlier filing date in foreign country; right of priority

An application for patent for an invention filed in this country by any person who has, or whose legal representatives or assigns have, previously regularly filed an application for a patent for the same invention in a foreign country which affords similar privileges in the case of applications filed in the United States or to citizens of the United States, shall have the same effect as the same application would have if filed in this country on the date on which the application for patent for the same invention was first filed in such foreign country, if the application in this country is filed within twelve months from the earliest date on which such foreign application was filed; but no patent shall be granted on any application for patent for an invention which had been patented or described in a printed publication in any country more than one year before the date of the actual filing of the application in this country, or which had been in public use or on sale in this country more than one year prior to such filing.

Title 35, U.S. Code § 120

Benefit or earlier filing date in the United States

An application for patent for an invention disclosed in the manner provided by the first paragraph of section 112 of this title in an application previously filed in the United States, or as provided by section 363 of this title, which is filed by an inventor or inventors named in the previously filed application shall have the same effect, as to such invention, as though filed on the date of the prior application, if filed before the patenting or abandonment of or termination of proceedings on the first application or an application similarly entitled to the benefit of the filing date of the first application and if it contains or is amended to contain a specific reference to the earlier filed application.

Please read carefully before signing the Declaration attached to the accompanying Application.

If you have any questions, please contact Morgan & Finnegan, L.L.P.

FORM:COMB-DEC.NY
Rev. 5/21/98

PATENT APPLICATION FEE DETERMINATION RECORD
Effective October 1, 2001

Application or Docket Number

3125-4002051

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	93	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	105 minus 20 = *	85
INDEPENDENT CLAIMS	13 minus 3 = *	10
MULTIPLE DEPENDENT CLAIM PRESENT <input checked="" type="checkbox"/>		

SMALL ENTITY TYPE OR

OTHER THAN SMALL ENTITY

RATE	FEE		RATE	FEE
BASIC FEE	370.00	OR	BASIC FEE	740.00
X\$ 9=	765	OR	X\$18=	
X42=	420	OR	X84=	
+140=	140	OR	+280=	
TOTAL	1695	OR	TOTAL	

* If the difference in column 1 is less than zero, enter "0" in column 2

CLAIMS AS AMENDED - PART II

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total *	Minus **	=
	Independent *	Minus ***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

SMALL ENTITY OR

OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X\$ 9=		OR	X\$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total *	Minus **	=
	Independent *	Minus ***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X\$ 9=		OR	X\$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total *	Minus **	=
	Independent *	Minus ***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X\$ 9=		OR	X\$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

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

PATENT APPLICATION SERIAL NO. _____

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

12/19/2001 MWOLDER1 00000030 134500 10015729

01 FC:201		370.00	OP
02 FC:202		420.00	OP
03 FC:203		765.00	OP
04 FC:204	27.00	113.00	OP

CLAIMS ONLY

SERIAL NO.

10005729

FILING DATE

11-01-01

APPLICANT(S)

CLAIMS

	AS FILED		AFTER 1st AMENDMENT		AFTER 2nd AMENDMENT			☆		☆		☆	
	IND.	DEP.	IND.	DEP.	IND.	DEP.		IND.	DEP.	IND.	DEP.	IND.	DEP.
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50		3											
TOTAL IND.		↓		↓		↓					↓		↓
TOTAL DEP.		↓		↓		↓					↓		↓
TOTAL CLAIMS													
51		/											
52		/											
53		/											
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98		3											
99		3											
100		3											
TOTAL IND.		↓		↓		↓					↓		↓
TOTAL DEP.		↓		↓		↓					↓		↓
TOTAL CLAIMS													

52
39
91
3
164

* MAY BE USED FOR ADDITIONAL CLAIMS OR ADMMENDMENTS

U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

FORM PTO-2022 (1-98)