

12-17-01

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Docket No. 3125-4002US1

Express Mail No. EL606933364US



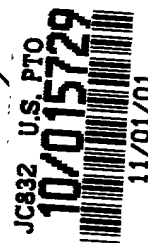
27123

PATENT TRADEMARK OFFICE

↑AFFIX CUSTOMER NO. LABEL ABOVE ↑

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

UTILITY APPLICATION AND FEE TRANSMITTAL §(1.53(b))



Commissioner for Patents  
**Box Patent Application**  
Washington, D.C. 20231

Sir:

Transmitted herewith for filing is the patent application of

Inventor(s) names and addresses: Keith R. McNally, San Diego, CA; William H. Roof, San Diego, CA; Richard Bergfeld, Chatsworth, CA

For: INFORMATION MANAGEMENT AND SYNCHRONOUS COMMUNICATIONS SYSTEM WITH MENU GENERATION

Enclosed Are:

- 27 page(s) of specification
- 1 page(s) of Abstract
- 20 page(s) of claims
- 6 sheets (Figs. 1-7) of  Formal  Informal drawings
- 6 page(s) of Declaration and Power of Attorney
- Unsigned
- Newly Executed
- Copy from prior application
- Deletion of inventors including Signed Statement under 37 C.F.R. §1.63(d)(2)

**REQUEST AND CERTIFICATION UNDER 35 U.S.C. §122(b)(2)(B)(i) (form PTO/SB/35)**

As indicated on the attached Request and Certification, Applicant(s) certify that the invention disclosed in the attached application HAS NOT and WILL NOT be the subject of an application filed in another country, or under a multilateral agreement, that requires publication at eighteen months after filing. Applicant(s) therefore request(s) that the attached application NOT be published under 35 U.S.C. §122(b).

Incorporation by Reference:

The entire disclosure of the prior application, from which a copy of the combined Declaration and Power of Attorney is supplied herein, is considered as being part of the disclosure of the accompanying application and is incorporated herein by reference.

Deletion of Inventors (37 C.F.R. §1.63(d) and §1.33(b))

Signed statement attached deleting inventor(s) named in the prior application serial no. \_\_\_\_\_, filed \_\_\_\_\_.

Microfiche Computer Program (Appendix)

page(s) of Sequence Listing

computer readable disk containing Sequence Listing

Statement under 37 C.F.R. §1.821(f) that computer and paper copies of the Sequence Listing are the same

Assignment Papers (assignment cover sheet and assignment documents)

A check in the amount of \$40.00 for recording the Assignment

Charge the Assignment Recordation Fee to Deposit Account No. 13-4500, Order No. \_\_\_\_\_.

Assignment Papers filed in the parent application Serial No. 09/400,413

Certification of chain of title pursuant to 37 C.F.R. §3.73(b)

Priority is claimed under 35 U.S.C. §119 for:  
Application No(s). \_\_\_\_\_, filed \_\_\_\_\_, in \_\_\_\_\_ (country).

Certified Copy of Priority Document(s) [\_\_\_\_\_]

filed herewith

filed in application Serial No. \_\_\_\_\_, filed \_\_\_\_\_.

English translation document(s) [\_\_\_\_\_]

filed herewith

filed in application Serial No. \_\_\_\_\_, filed \_\_\_\_\_.

Priority is claimed under 35 U.S.C. §119(e) for:  
Provisional Application No. \_\_\_\_\_, filed \_\_\_\_\_.

FOR FILING

- Information Disclosure Statement
  - Copy of [\_\_\_\_\_] cited references
  - PTO Form-1449
  - References cited in parent application Serial No. \_\_\_\_\_, filed \_\_\_\_\_.
  
- Related Case Statement under 37 C.F.R. §1.98(a)(2)(iii)
  - A copy of related pending U.S. Application(s) Serial No(s): \_\_\_\_\_, filed \_\_\_\_\_, respectively, is attached hereto.
  - A copy of related pending U.S. Application(s) entitled, \_\_\_\_\_, filed \_\_\_\_\_ to inventor(s) \_\_\_\_\_, respectively, is attached hereto.
  - A copy of each related application(s) was submitted in parent application serial no. \_\_\_\_\_, filed \_\_\_\_\_.
  
- Preliminary Amendment
- Return receipt postcard (MPEP 503)
- This is a  continuation  divisional  continuation-in-part of prior application serial no. 09/400,413, filed September 21, 1999, to which priority under 35 U.S.C. §120 is claimed.
  - Cancel in this application original claims \_\_\_\_\_ of the parent application before calculating the filing fee. (At least one original independent claim must be retained for filing purposes.)
  - A Preliminary Amendment is enclosed. (Claims added by this Amendment have been properly numbered consecutively beginning with the number following the highest numbered original claim in the prior application).
  
- The status of the parent application is as follows:
  - A Petition for Extension of Time and a Fee therefor has been or is being filed in the parent application to extend the term for action in the parent application until \_\_\_\_\_.
  - A copy of the Petition for Extension of Time in the co-pending parent application is attached.
  - No Petition for Extension of Time and Fee therefor are necessary in the co-pending parent application.
  
- Please abandon the parent application at a time while the parent application is pending or at a time when the petition for extension of time in that application is granted and while this application is pending has been granted a filing date, so as to make this application co-pending.
  
- Transfer the drawing(s) from the parent application to this application
- Amend the specification by inserting before the first line the sentence:  
This is  continuation  divisional  continuation-in-part of co-pending application Serial No. \_\_\_\_\_, filed \_\_\_\_\_.

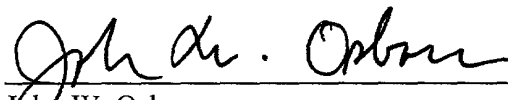
I. CALCULATION OF APPLICATION FEE				
	Number Filed	Number Extra	Rate	Basic Fee \$740.00/370.00
Total Claims*	102- 20 =	82x	\$18.00/ \$9.00	\$ 738.00
Independent Claims	13- 3 =	10x	\$84.00/ \$42.00	\$ 420.00
<input checked="" type="checkbox"/> Multiple Dependent Claims		If marked, add fee of \$280.00 (\$140.00)		\$ 140.00
* Reflects total number of claims for fee purposes, with multiple dependent claims being counted according to 37 C.F.R. §1.75(c)				
TOTAL:				\$ 1668.00

- Small entity status is or has been claimed. Reduced fees under 37 C.F.R. §1.9 (f) paid herewith \$1668.00.
- A check in the amount of \$1668.00 in payment of the application filing fees is attached.
- Charge fee to Deposit Account No. 13-4500, Order No. \_\_\_\_\_. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.
- The Commissioner is hereby authorized to charge any additional fees which may be required for filing this application pursuant to 37 CFR §1.16, **including all extension of time fees pursuant to 37 C.F.R. § 1.17 for maintaining copendency** with the parent application, or credit any overpayment to Deposit Account No. 13-4500, Order No. 3125-4002US1. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.

Respectfully submitted,  
MORGAN & FINNEGAN, L.L.P.

Dated: November 1, 2001

By:

  
John W. Osborne  
Registration No. 36,231

Correspondence Address:  
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345 Park Avenue  
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(212) 758-4800 Telephone  
(212) 751-6849 Facsimile

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): McNally et al.

Group Art Unit: 2173 (parent case)

Serial No.: Continuation of 09/400,413

Examiner: Cao Nguyen (parent case)

Filed: Herewith

For: INFORMATION MANAGEMENT AND SYNCHRONOUS COMMUNICATIONS SYSTEM WITH MENU GENERATION



EXPRESS MAIL CERTIFICATE

Express Mail Label No.: EL606933364US

Date of Deposit: November 1, 2001

I hereby certify that the following attached paper(s) and/or fee

1. Utility Application and Fee Transmittal Form;
2. Combined Declaration and POA;
3. Preliminary Amendment;
4. Check in the amount of \$1,668.00;
5. Patent Application (Specs. 26 pgs., Claims 20 pgs. Abstract 1 pg.)
6. Formal Drawings (6 sheets - Figs. 1-7)
5. Return Receipt Postcard.

is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. §1.10 on the date indicated above and is addressed to BOX CPA, Commissioner for Patents, Washington, D.C. 20231.

Jesus Raul Remedios

(Typed or printed name of person mailing papers(s) and/or fee)

(Signature of person mailing paper(s) and/or fee)

Correspondence Address:

MORGAN & FINNEGAN, L.L.P.  
345 Park Avenue  
New York, NY 10154-0053  
(212) 758-4800 Telephone  
(212) 751-6849 Facsimile

OFFICE "SECRET"

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

**APPLICANTS:** McNally et al. **GROUP ART UNIT:**2173 (parent case)

**SERIAL NO.:** Continuation of 09/400,413 **EXAMINER:** Cao Nguyen (parent case)

**FILED:** HEREWITH

**FOR:** INFORMATION MANAGEMENT AND SYNCHRONOUS  
COMMUNICATIONS SYSTEM WITH MENU GENERATION

COMMISSIONER FOR PATENTS  
Washington, D.C. 20231

**PRELIMINARY AMENDMENT**

Responsive to the Final Rejection in the Parent Case dated May 22, 2001, Applicants respectfully request reconsideration in view of the amendment and following remarks. No fees are believed due. However, in the event that any fees are necessitated by this response, the Commissioner is hereby authorized to charge our Deposit Account 13-4500, Order No. 3125-4002US1.

**IN THE CLAIMS**

Please add new claim 93 as follows.

93. (new) The information management and synchronous communication system of claim 45 wherein a non-simultaneous protocol is used to acknowledge receipt of the data at the valet parking base station.

**REMARKS**

**I. Status of the Claims**

Claims 1-92 are pending in this application, with claim 93 being added by this Amendment.

Claims identical to claims 1-19, 20-28, and 35-39 were rejected in the parent case under 35 U.S.C. 102(e) as being anticipated by Cupps et al. In the parent case these

claims were identified by numbers 1-19, 31-39, and 50-54 respectively. This Amendment will refer to the claims by their new numbers.

Claims identical to claims 29-34 and 40-41 were rejected in the parent case under 35 U.S.C. 103(a) as being unpatentable over Cupps in view of Behr. In the parent case these claims were identified by numbers 44-49 and 56-57 respectively. This Amendment will refer to the claims by their new numbers.

Of the pending claims for which identical claims were rejected in the parent application, claims 1, 12, 20, 29, 32, and 33 are independent.

## **II. Rejections Under 35 U.S.C. 102(e)**

In the parent application the Examiner rejected claims identical to independent claims 1, 12, and 20 under 35 U.S.C. 102(e) as being anticipated by Cupps et al.

With regard to claims identical to independent claims 1, 12, and 20 of the present application, the Examiner argues that at lines 35-65 of column 9 and in figs. 2 and 3a-3f, Cupps discloses information synchronization involving a second or modified menu. However Applicants respectfully disagree.

The first section cited by the examiner, column 9 lines 35-65, fails to disclose information synchronization involving a second or modified menu, nor any other sort of information synchronization. This section instead discloses a customer providing to an online ordering machine registration information, location information, time of day information, and an indication of the type of service sought (e.g., takeout or delivery).

The second section cited by the examiner, Fig. 2, is a system overview showing an online ordering machine component, a client machine component connected to the online ordering machine via a network, and telephone and fax components connected to the online ordering machine via standard telephone lines. Also shown are various elements of the online ordering machine and the client machine. However, nowhere in the figure or its corresponding disclosure is there any indication of synchronization involving a second or

modified menu. More generally, there is no disclosure of information synchronization occurring between any components of the system, nor is there disclosure of any other sort of information synchronization.

The third section cited by the examiner, Figs. 3a-3f, fails to disclose synchronization involving a second or modified menu and instead discloses the “schema” – that is the organization and structure – of the order database 128 (see Cupps, Col. 5 Ln. 21). Nowhere in the figures or in the corresponding disclosure is there even any indication that the order database is involved in any sort of information synchronization. In fact, there is no disclosure of any sort of information synchronization in this section.

Furthermore, the remainder of the Cupps disclosure also fails to disclose synchronization involving a second or modified menu, nor any other sort of information synchronization.

Accordingly, Cupps fails to disclose at least the aspect of independent claim 1 wherein:

“... data comprising the second menu is synchronized between the data storage device connected to the central processing unit and at least one other computing device ...”  
(emphasis added)

Similarly, Cupps also fails to disclose at least the aspect of independent claim 12 wherein:

“ ... data comprising the modified menu is synchronized between the data storage device and at least one other computing device...”  
(emphasis added)

Furthermore, Cupps fails to disclose at least the aspect of independent claim 26 wherein:

“ ... synchronizing the data comprising the second menu between the storage device and at least one other data storage medium, wherein the other data storage medium is connected to or is part of a different computing device...”



(emphasis added)

The disclosure of the present invention explains that according to the claimed synchronization there is, for example:

“ ... fast synchronization between a central database and multiple handheld devices, synchronization and communication between a Web server and multiple handheld devices, a well-defined API that enables third parties such as POS companies, affinity program companies and internet content providers to fully integrate with computerized hospitality applications, real-time communication over the internet with direct connections or regular modem dialup connections and support for batch processing that can be done periodically throughout the day to keep multiple sites in synch with the central database.”

(see disclosure, p. 7 ln. 21 – p. 8 ln. 4; emphasis added)

As another example, the disclosure of the present invention notes that according to such synchronization:

“ ... a reservation made online can be automatically communicated to the backoffice server and then synchronized with all the wireless handheld devices wirelessly. Similarly, changes made on any of the wireless handheld devices are reflected instantaneously on the backoffice server Web pages and the other handheld devices.”

(see disclosure, p. 8 ln. 13-16; emphasis added)

In light of the above, Applicants submit that independent claims 1, 12, and 20 are in condition for allowance. As claims 2-11, 13-19, 21-28, 35-39, 49-68, and 84-92 depend therefrom, these claims, for at least the above-identified reasons, are also thought to be allowable.

**III. Rejections Under 35 U.S.C. 103(a)**

In the parent application the Examiner rejected claims identical to independent claims 29, 32, and 33 under 35 U.S.C. 102(e) as being unpatentable over Cupps in view of Behr.

As explained above, Cupps fails to disclose any sort of information synchronization. Furthermore, Applicants find no disclosure in Behr of any sort of information synchronization, nor does the Examiner provide any reference to such disclosure in Behr .

Applicants therefore submit that Cupps and Behr, alone or in combination, fail to disclose, teach, or suggest at least the aspect of independent claim 29 wherein:

"... applications or data are synchronized wirelessly between the central database and at least one wireless handheld computing device and wherein the applications program interface and communications control module establish a seamless link between the data in the central database and the data on the wireless handheld computing device.."  
(emphasis added)

Similarly, Cupps and Behr, alone or in combination, fail to disclose, teach, or suggest at least the aspect of independent claim 32 wherein:

"... hospitality applications or data are synchronized between the central database, at least one wireless computing device and at least one wireless paging or beeper device and wherein messaging to the wireless paging or beeper device is enabled directly from the operator interface of the wireless computing device."  
(emphasis added)

Furthermore, Cupps and Behr, alone or in combination, fail to disclose, teach, or suggest at least the aspect of independent claim 33 wherein:

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

the central database and the data on the second storage medium.”  
(emphasis added)

The Examiner also states:

“Behr teaches wireless handheld computing device on which hospitality application (see col. 14, lines 1-57).”

Applicants respectfully disagree. Behr discloses “a method of providing route guidance information and other information from a base unit to a mobile unit in response to a request from the mobile unit” (see Behr, Col. 4 Ln. 28-31). Behr explains that the mobile unit sends the request for route guidance as a “query message 120” including a “destination field 144” and a “destination type field 146”, and, for example, that the “destination type field 146 may be ‘restaurant’, and the destination field 144 may be ‘McDonald’s’” (see Behr, Col. 14 Ln. 37-44). Behr also discloses that other specifiable destinations include “airport[s]” and “museum[s]” (see Behr, Col. 14 Ln. 42).

However, Applicants submit that simply stating that a mobile unit may request from a navigation system directions to a restaurant does not constitute disclosure of a hospitality software application. As known in the art, a hospitality software application is, for example, a piece of software used to provide operational solutions in hospitality industries such as restaurants and hotels concerning, for example, food ordering, menus, wait-lists and reservations. Accordingly, Applicants submit that Behr fails to teach a “wireless handheld computing device on which hospitality application” as suggested by the Examiner.

In light of at least the above, Applicants submit that independent claims 29, 32, and 33 are in condition for allowance. As claims 30, 31, 34, 40-48, and 93 depend therefrom, these claims, for at least the above-identified reasons, are also thought to be allowable.

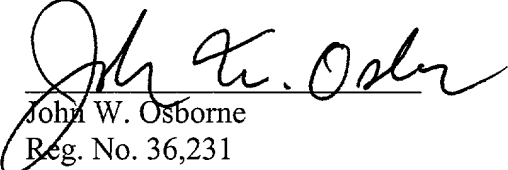
**IV. Conclusion and Authorization**

Applicants believe that all pending claims are allowable over the cited art.

The Commissioner is hereby authorized to charge any additional fees which may be required for this amendment, or credit any overpayment to Deposit Account No. 13-4500, Order No. 3125-4002. **A DUPLICATE OF THIS DOCUMENT IS ATTACHED.**

In the event that an extension of time is required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account No. 13-4500, Order No. 3125-4002US1. **A DUPLICATE OF THIS DOCUMENT IS ATTACHED.**

Respectfully submitted,  
MORGAN & FINNEGAN, L.L.P.

  
John W. Osborne  
Reg. No. 36,231

November 1, 2001  
MORGAN & FINNEGAN, L.L.P.  
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New York, NY 10154  
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

**APPLICANTS:** McNally et al. **GROUP ART UNIT:**2173 (parent case)  
**SERIAL NO.:** Continuation of 09/400,413 **EXAMINER:** Cao Nguyen (parent case)  
**FILED:** HEREWITH  
**FOR:** INFORMATION MANAGEMENT AND SYNCHRONOUS  
COMMUNICATIONS SYSTEM WITH MENU GENERATION

COMMISSIONER FOR PATENTS  
Washington, D.C. 20231

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93. (new) The information management and synchronous  
communication system of claim 45 wherein a non-simultaneous protocol is used to acknowledge  
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**I. Status of the Claims**

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parent case under 35 U.S.C. 102(e) as being anticipated by Cupps et al. In the parent case these

FOR "SECRET"

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Claims identical to claims 29-34 and 40-41 were rejected in the parent case under 35 U.S.C. 103(a) as being unpatentable over Cupps in view of Behr. In the parent case these claims were identified by numbers 44-49 and 56-57 respectively. This Amendment will refer to the claims by their new numbers.

Of the pending claims for which identical claims were rejected in the parent application, claims 1, 12, 20, 29, 32, and 33 are independent.

## II. Rejections Under 35 U.S.C. 102(e)

In the parent application the Examiner rejected claims identical to independent claims 1, 12, and 20 under 35 U.S.C. 102(e) as being anticipated by Cupps et al.

With regard to claims identical to independent claims 1, 12, and 20 of the present application, the Examiner argues that at lines 35-65 of column 9 and in figs. 2 and 3a-3f, Cupps discloses information synchronization involving a second or modified menu. However Applicants respectfully disagree.

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Furthermore, the remainder of the Cupps disclosure also fails to disclose synchronization involving a second or modified menu, nor any other sort of information synchronization.

Accordingly, Cupps fails to disclose at least the aspect of independent claim 1 wherein:

“... data comprising the second menu is synchronized between the data storage device connected to the central processing unit and at least one other computing device ...”  
(emphasis added)

Similarly, Cupps also fails to disclose at least the aspect of independent claim 12 wherein:

“ ... data comprising the modified menu is synchronized between the data storage device and at least one other computing device...”  
(emphasis added)

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FOOTNOTES

(emphasis added)

The disclosure of the present invention explains that according to the claimed synchronization there is, for example:

“ ... fast synchronization between a central database and multiple handheld devices, synchronization and communication between a Web server and multiple handheld devices, a well-defined API that enables third parties such as POS companies, affinity program companies and internet content providers to fully integrate with computerized hospitality applications, real-time communication over the internet with direct connections or regular modem dialup connections and support for batch processing that can be done periodically throughout the day to keep multiple sites in synch with the central database.”

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As another example, the disclosure of the present invention notes that according to such synchronization:

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(see disclosure, p. 8 ln. 13-16; emphasis added)

In light of the above, Applicants submit that independent claims 1, 12, and 20 are in condition for allowance. As claims 2-11, 13-19, 21-28, 35-39, 49-68, and 84-92 depend therefrom, these claims, for at least the above-identified reasons, are also thought to be allowable.

FOOTNOTES



III. Rejections Under 35 U.S.C. 103(a)

In the parent application the Examiner rejected claims identical to independent claims 29, 32, and 33 under 35 U.S.C. 102(e) as being unpatentable over Cupps in view of Behr.

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Applicants therefore submit that Cupps and Behr, alone or in combination, fail to disclose, teach, or suggest at least the aspect of independent claim 29 wherein:

"... applications or data are synchronized wirelessly between the central database and at least one wireless handheld computing device and wherein the applications program interface and communications control module establish a seamless link between the data in the central database and the data on the wireless handheld computing device.."  
(emphasis added)

Similarly, Cupps and Behr, alone or in combination, fail to disclose, teach, or suggest at least the aspect of independent claim 32 wherein:

" ... hospitality applications or data are synchronized between the central database, at least one wireless computing device and at least one wireless paging or beeper device and wherein messaging to the wireless paging or beeper device is enabled directly from the operator interface of the wireless computing device."  
(emphasis added)

Furthermore, Cupps and Behr, alone or in combination, fail to disclose, teach, or suggest at least the aspect of independent claim 33 wherein:

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

FOOTNOTES

the central database and the data on the second storage medium.”  
(emphasis added)

The Examiner also states:

“Behr teaches wireless handheld computing device on which hospitality application (see col. 14, lines 1-57).”

Applicants respectfully disagree. Behr discloses “a method of providing route guidance information and other information from a base unit to a mobile unit in response to a request from the mobile unit” (see Behr, Col. 4 Ln. 28-31). Behr explains that the mobile unit sends the request for route guidance as a “query message 120” including a “destination field 144” and a “destination type field 146”, and, for example, that the “destination type field 146 may be ‘restaurant’, and the destination field 144 may be ‘McDonald’s’” (see Behr, Col. 14 Ln. 37-44). Behr also discloses that other specifiable destinations include “airport[s]” and “museum[s]” (see Behr, Col. 14 Ln. 42).

However, Applicants submit that simply stating that a mobile unit may request from a navigation system directions to a restaurant does not constitute disclosure of a hospitality software application. As known in the art, a hospitality software application is, for example, a piece of software used to provide operational solutions in hospitality industries such as restaurants and hotels concerning, for example, food ordering, menus, wait-lists and reservations. Accordingly, Applicants submit that Behr fails to teach a “wireless handheld computing device on which hospitality application” as suggested by the Examiner.

In light of at least the above, Applicants submit that independent claims 29, 32, and 33 are in condition for allowance. As claims 30, 31, 34, 40-48, and 93 depend therefrom, these claims, for at least the above-identified reasons, are also thought to be allowable.

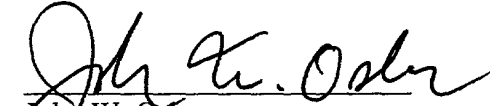
**IV. Conclusion and Authorization**

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Respectfully submitted,  
MORGAN & FINNEGAN, L.L.P.

  
John W. Osborne  
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November 1, 2001  
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345 Park Avenue  
New York, NY 10154  
(212)758-4800 / (212)751-6849 (facsimile)

TOP SECRET

1

UNITED STATES PATENT APPLICATION

2

For:

3

**INFORMATION MANAGEMENT AND SYNCHRONOUS COMMUNICATIONS  
SYSTEM WITH MENU GENERATION**

4

5

6

7

Inventors:

8

**Keith R. McNALLY**

9

**WILLIAM H. ROOF**

10

**RICHARD BERGFELD**

FOR "SECRET"

1 **UNITED STATES PATENT APPLICATION**

2  
3 **OF: KEITH R. McNALLY**  
4 **WILLIAM H. ROOF**  
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8 **FOR: INFORMATION MANAGEMENT AND SYNCHRONOUS**  
9 **COMMUNICATIONS SYSTEM WITH MENU**  
10 **GENERATION**  
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12 The present application is a continuation of application Serial No. 09/400,413,  
13 filed September 21, 1999. The contents of application Serial No. 09/400,413 are incorporated  
14 herein by reference.

15 **FIELD OF THE INVENTION**

16 This invention relates to an information management and synchronous  
17 communications system and method for generation of computerized menus for restaurants and  
18 other applications with specialized display and synchronous communications requirements  
19 related to, for example, the use of equipment or software with non-PC-standard graphical  
20 formats, display sizes and/or applications for use in remote data entry, information management  
21 and synchronous communication between host computer, digital input device or remote pager  
22 via standard hardwired connection, the internet, a wireless link, smart phone or the like.

23 **BACKGROUND OF THE INVENTION**

24 While computers have dramatically altered many aspects of modern life, pen and  
25 paper have prevailed in the hospitality industry, e.g., for restaurant ordering, reservations and  
26 wait-list management, because of their simplicity, ease of training and operational speed. For  
27 example, ordering prepared foods has historically been done verbally, either directly to a waiter

1 or over the telephone, whereupon the placed order is recorded on paper by the recipient or  
2 instantly filled.

3           Although not previously adapted for wide-scale use in the hospitality industry,  
4 various forms of digital wireless communication devices are in common use, e.g., digital  
5 wireless messengers and pagers. Also in common use are portable laptop and handheld devices.  
6 However, user-friendly information management and communication capability not requiring  
7 extensive computer expertise has not heretofore been available for use in everyday life such as  
8 for restaurant ordering, reservations and wait-list management. Hundreds of millions of dollars  
9 have been spent on personal digital assistant (“PDA”) development seeking to produce a small,  
10 light-weight and inexpensive device that could be adapted to such uses; yet none have yielded a  
11 satisfactory solution.

12           One of the inherent shortcomings of PDA type devices is that, as they strive for  
13 small size, low weight and low cost, they must compromise the size and clarity of the operator  
14 display medium interface itself, which in most cases is one of a variety of LCD (liquid crystal  
15 display) type devices. As the size of the display shrinks, the amount of information that may be  
16 displayed at any one point or time is commensurately decreased, typically requiring multiple  
17 screens and displays to display information to the operator. This reduces the overall utility of the  
18 device. Additionally, the smaller display and keyboard results in a non-optimal operator  
19 interface, which slows down operation and is thus unacceptable for the time criticality of  
20 ordering, reservation and wait-list management and other similar applications. This necessitates  
21 many design compromises which in the aggregate have resulted in limited acceptance of PDA  
22 type devices in the restaurant and hospitality fields.

1 Many of the negatives prevalent in earlier devices have been eliminated, but, to  
2 date, there is still no integrated solution to the ordering/waitlist/reservation problem discussed  
3 above. With the advent of the Palm<sup>®</sup> and other handheld wireless devices, however, the efforts  
4 to make such devices ubiquitous have begun to bear fruit at least in some areas, e.g., personal  
5 calendars. However, substantial use of such devices in the restaurant and hospitality context has  
6 not occurred to date. As discussed above, at least one of the reasons PDAs have not been  
7 quickly assimilated into the restaurant and hospitality industries is that their small display sizes  
8 are not readily amenable to display of menus as they are commonly printed on paper or displayed  
9 on, e.g., large, color desktop computer screens. Another reason is that software for fully  
10 realizing the potential for wireless handheld computing devices has not previously been  
11 available. Such features would include fast and automatic synchronization between a central  
12 database and multiple handheld devices, synchronization and communication between a World  
13 Wide Web (“Web”) server and multiple handheld devices, a well-defined application program  
14 interface (“API”) that enables third parties such as point of sale (“POS”) companies, affinity  
15 program companies and internet content providers to fully integrate with computerized  
16 hospitality applications, real-time communication over the internet with direct connections or  
17 regular modem dialup connections and support for batch processing that can be done periodically  
18 throughout the day to keep multiple sites in synch with the central database. A single point of  
19 entry for all hospitality applications to communicate with one another wirelessly has also  
20 previously been unavailable. Such a single point of entry would work to keep all wireless  
21 handheld devices and linked Web sites in synch with the backoffice server (central database) so  
22 that the different components are in equilibrium at any given time and an overall consistency is  
23 achieved. For example, a reservation made online would be automatically communicated to the

1 backoffice server and then synchronized with all the wireless handheld devices wirelessly.  
2 Similarly, changes made on any of the wireless handheld devices would be reflected  
3 instantaneously on the backoffice server, Web pages and the other handheld devices.

4 For the foregoing reasons, paper-based ordering, waitlist and reservations  
5 management have persisted in the face of widespread computerization in practically all areas of  
6 commerce. At most, computerization of these functions has been largely limited to fixed  
7 computer solutions, i.e., desktop or mainframe, because of the problems heretofore faced in  
8 configuring wireless handheld devices and maintaining database synchronization for such  
9 applications. Specifically, the unavailability of any simple technique for creating restaurant  
10 menus and the like for use in a limited display area wireless handheld device or that is  
11 compatible with ordering over the internet has prevented widespread adoption of  
12 computerization in the hospitality industry. Without a viable solution for this problem,  
13 organizations have not made the efforts or investments to establish automated interfaces to  
14 handheld and Web site menus and ordering options.

15 A principal object of the present invention is to provide an improved information  
16 management and synchronous communications system and method which facilitates user-  
17 friendly and efficient generation of computerized menus for restaurants and other applications  
18 that utilize equipment with non-PC-standard graphical formats, display sizes and/or applications.

19 A further object of the present invention is to provide an improved information  
20 management and synchronous communications system and method which provides for entry,  
21 management and communication of information from the operator as well as to and from another  
22 computer, Web page menu, remote digital device using a standard hardwired connection, the  
23 internet or a wireless link.





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The menu generation approach of the present invention has many advantages over previous approaches in solving the problem of converting paper-based menus or Windows® PC-based menu screens to small PDA-sized displays and Web pages. In one embodiment, the present invention is a software tool for building a menu, optimizing the process of how the menu can be downloaded to either a handheld device or Web page, and making manual or automatic modifications to the menu after initial creation.

The use of wireless handheld devices in the restaurant and hospitality industry is becoming increasingly pervasive as restaurant owners and managers become more aware of the benefits. With the proper wireless handheld system in place, restaurants can experience increased table turns from improved server productivity and shorter order taking and check paying times. Restaurants and POS companies seeking to provide a wireless handheld interface to their desktop-based POS systems or a Web page equivalent face several challenges. These challenges include building a menu using their existing database and transferring the menu onto handheld devices or Web pages that will interface with servers wirelessly or to restaurants/customers over the internet. The menu generation approach of the present invention is the first coherent solution available to accomplish these objectives easily and allows one development effort to produce both the handheld and Web page formats, link them with the existing POS systems, and thus provides a way to turn a complicated, time-consuming task into a simple process.

The information management and synchronous communications system of the present invention features include fast synchronization between a central database and multiple handheld devices, synchronization and communication between a Web server and multiple handheld devices, a well-defined API that enables third parties such as POS companies, affinity

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1 program companies and internet content providers to fully integrate with computerized  
2 hospitality applications, real-time communication over the internet with direct connections or  
3 regular modem dialup connections and support for batch processing that can be done periodically  
4 throughout the day to keep multiple sites in synch with the central database.

5 The communication module also provides a single point of entry for all hospitality  
6 applications, e.g., reservations, frequent customer ticketing, wait lists, etc. to communicate with  
7 one another wirelessly and over the Web. This communication module is a layer that sits on top  
8 of any communication protocol and acts as an interface between hospitality applications and the  
9 communication protocol and can be easily updated to work with a new communication protocol  
10 without modifying the core hospitality applications. A single point of entry works to keep all  
11 wireless handheld devices and linked web sites in synch with the backoffice server applications  
12 so that the different components are in equilibrium at any given time and an overall consistency  
13 is achieved. For example, a reservation made online can be automatically communicated to the  
14 backoffice server and then synchronized with all the wireless handheld devices wirelessly.  
15 Similarly, changes made on any of the wireless handheld devices are reflected instantaneously on  
16 the backoffice server Web pages and the other handheld devices.

17 **BRIEF DESCRIPTION OF THE DRAWINGS**

18 The foregoing features and advantages of the present invention can be appreciated  
19 more fully from the following description, with references to the accompanying drawings in  
20 which:

21 FIG. 1 is a schematic representation of a window displayed on a computer display  
22 screen which shows a hierarchical tree menu, modifier window and sub-modifier window in  
23 conformity with a preferred embodiment of the present invention.

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1           FIG. 2 is a schematic representation of a modifier dialog box in conformity with a  
2 preferred embodiment of the present invention.

3           FIG. 3 is a schematic representation of a menu category dialog box in conformity  
4 with a preferred embodiment of the present invention.

5           FIG. 4 is a schematic representation of a menu item dialog box in conformity with  
6 a preferred embodiment of the present invention.

7           FIG. 5 is a schematic representation of a display customization dialog box in  
8 conformity with a preferred embodiment of the present invention.

9           FIG. 6 is a schematic representation of a communications control window in  
10 conformity with a preferred embodiment of the present invention.

11           FIG. 7 is a schematic representation of a point of sale interface on a wireless  
12 handheld device for use in displaying page menus created in conformity with a preferred  
13 embodiment of the present invention.

14                           **DETAILED DESCRIPTION OF THE INVENTION**

15           Most personal computers today run under an operating system that provides a  
16 graphical user interface (“GUI”) for accessing user applications. A GUI is used in the preferred  
17 embodiment of the present invention. Through an interface of windows, pull-down menus, and  
18 toolbars, GUI operating systems have simplified PCs and have rendered computer technology  
19 more user friendly by eliminating the need to memorize keyboard entry sequences. In addition,  
20 GUIs allow users to manipulate their data as they would physical entities. For example, a  
21 window can represent a file and the contents of the window can represent the records of the file.  
22 The window can be opened, closed, or set aside on a desktop as if it were an actual object. The  
23 records of the file can be created, deleted, modified and arranged in a drag-and-drop fashion as if

1 they also were physical objects. The most common GUI operating systems that provide this  
2 “object-oriented” environment for personal computers are Microsoft Windows<sup>®</sup> systems,  
3 including Windows CE<sup>®</sup> for handheld wireless devices and the like. Generally, a particular  
4 application program presents information to a user through a window of a GUI by drawing  
5 images, graphics or text within the window region. The user, in turn, communicates with the  
6 application by “pointing” at graphical objects in the window with a pointer that is controlled by a  
7 hand-operated pointing device, such as a mouse, or by pressing keys on a keyboard.

8           The use of menus is conventional in GUIs for software applications. Menus are  
9 typically utilized to provide end users of applications with available choices or processing  
10 options while using the applications. For example, in a typical desktop or interactive application,  
11 selection of a “file” from a menu bar may cause display of a context menu which provides “file”  
12 options. File options can have additional subordinate or child options associated with them. If a  
13 file option having subordinate options is selected, the child options are displayed in context in a  
14 child menu or submenu proximate to the selected parent option. One or more of the child  
15 options provided in the child menu may have further subordinate options. Thus, such a menu  
16 system comprises cascading sets of menus which are displayable in context to show the  
17 parent/child relationships between options of the context menu. A menu system of this type is  
18 incorporated into the preferred embodiment of the invention.

19           The preferred embodiment of the present invention uses typical hardware  
20 elements in the form of a computer workstation, operating system and application software  
21 elements which configure the hardware elements for operation in accordance with the present  
22 invention. A typical workstation platform includes hardware such as a central processing unit  
23 (“CPU”), e.g., a Pentium<sup>®</sup> microprocessor, RAM, ROM, hard drive storage in which are stored

1 various system and application programs and data used within the workstation, modem, display  
 2 screen, keyboard, mouse and optional removable storage devices such as floppy drive or a CD  
 3 ROM drive. The workstation hardware is configured by software including an operating system,  
 4 e.g., Windows<sup>®</sup> 95, 98, NT or CE, networking software (including internet browsing software)  
 5 and application software components. The preferred embodiment also encompasses a typical file  
 6 server platform including hardware such as a CPU, e.g., Pentium<sup>®</sup> microprocessor, RAM, ROM,  
 7 hard drive, modem, and optional removable storage devices, e.g., floppy or CD ROM drive. The  
 8 server hardware is configured by software including an operating system, e.g., Windows<sup>®</sup> 95, 98,  
 9 NT or CE, networking software (including Web server software) and database software.

10           A computer workstation for use in the preferred embodiment also includes a GUI.  
 11 As is conventional, the GUI is configured to present a graphical display on the display screen  
 12 arranged to resemble a single desktop. Execution of an application program involves one or  
 13 more user interface objects represented by windows and icons. Typically, there may be several  
 14 windows and icons simultaneously present on the desktop and displaying information that is  
 15 generated by different applications.

16           The window environment is generally part of the operating system software that  
 17 includes a collection of utility programs for controlling the operation of the computer system.  
 18 The computer system, in turn, interacts with application programs to provide higher level  
 19 functionality, including a direct interface with the user. Specifically, the application programs  
 20 make use of operating system functions by issuing task commands to the operating system which  
 21 then performs the requested task. For example, an application program may request that the  
 22 operating system display certain information on a window for presentation to the user.

1 An aspect of the preferred embodiment of the information management and  
2 communications system of the invention is shown in FIG. 1. FIG. 1 shows an example of the  
3 GUI provided by the operating system of the preferred embodiment of the present invention.  
4 With reference to FIG. 1, the preferred embodiment includes an intuitive GUI 1 from which to  
5 build a menu on a desktop or other computer. A hierarchical tree structure 2 is used to show the  
6 different relationships between the menu categories 3 (e.g., soups, salads, appetizers, entrees,  
7 deserts, etc.), menu items 4 (e.g., green salad, chicken caesar salad, etc.), menu modifiers 5 (e.g.,  
8 dressing, meat temperature, condiments, etc.) and menu sub-modifiers 6 (e.g., Italian, French,  
9 ranch, bleu cheese, etc.).

10 The procedure followed in configuring a menu on the desktop PC and then  
11 downloading the menu configuration onto the POS interface on the handheld device in  
12 conformance with the preferred embodiment is as follows.

13 The menu configuration application is launched by clicking on the appropriate  
14 icon on the desktop display screen. FIG. 1 will then be displayed. There are three windows on  
15 the screen shown in FIG. 1. The left window is the menu tree 7, also called the tree view. The  
16 top right window is the Modifiers window 8 and the bottom right window is the Sub-Modifiers  
17 window 9. The Sub-Modifiers window lists the sub-modifiers that correspond to the modifier  
18 that is selected. The views on the right are referred to as list views. There are several ways of  
19 invoking a command, including using the menu options; using the context menu (right mouse  
20 click); using the keyboard or using the toolbar icons. For example, if it is desired to add a  
21 category to the menu, the following four options are available: (1) clicking on Edit, Add  
22 Category; (2) right mouse clicking on Menu, then clicking on Add Category; (3) highlighting  
23 Menu, then typing Ctrl + T or (4) clicking on the Add Category icon on the toolbar. To add an

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1 item to a category, the following options are available: (1) highlighting the category to which it  
2 is desired to add an item and then clicking on Edit > Add Item; (2) right mouse clicking on the  
3 desired category and then clicking on Add Item; (3) highlighting the desired category, then  
4 typing Ctrl + N or (4) clicking on the Add icon on the toolbar.

5 When building a menu, it should be kept in mind that the menu items are stored  
6 using a tree metaphor similar to how files are stored on a PC with folders and subfolders. The  
7 menu structure is similar to the Windows® File Explorer in the way the items are organized  
8 hierarchically. Below is an example of how an item may be configured:

```
9 Menu  
10 >> Entrees  
11 >>> Red Meat  
12 >>>> NY Strip  
13 >>>> Vegetables  
14 >>>>> Tomato  
15 >>>>> Lettuce  
16 >>>> Meat Temperature  
17 >>>>> Medium Rare
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18  
19 In the above example, Menu is the root. Entrees is a menu category. Red Meat is an Entree  
20 category. NY Strip is a modifier. Vegetable is a modifier. Meat Temperature is a modifier.  
21 Medium Rare is a sub-modifier of Meat Temperature.

22 The steps taken in building a menu are as follows:

- 23 1. Add Modifiers;
- 24 2. Add Sub-Modifiers and link them to the Modifiers;
- 25 3. Create Menu categories;
- 26 4. Add menu items to the categories;
- 27 5. Assign Modifiers to the menu items;
- 28 6. Preview the menu on the POS emulator on the desktop PC;
- 29 7. Download the menu database to the handheld device.



1           To add modifiers, a user clicks on the inside of the Modifiers window, then (1)  
2 clicks on Edit>Add Modifier; (2) Presses Ctrl + N; (3) right mouse clicks in the Modifiers  
3 window, then clicks on Add Modifiers or (4) clicks on the Add icon from the toolbar. If a menu  
4 is being built from scratch, the procedure is to enter the Long Name, Short Name, Code and  
5 Price in the Modifier dialog box 10 shown in FIG. 2. The Long Name is the full descriptive  
6 name of the item. The Short Name is the abbreviated name that will be displayed on the  
7 handheld device. The Code is the numeric or alphanumeric code for the item. If there is an  
8 existing database, the existing database can be browsed and menu items retrieved from the  
9 database. Clicking on the Browse button will bring up the existing database of menu items. The  
10 item to be added is then selected and "OK" is clicked. The fields will then be filled with the  
11 information from the database. Clicking on OK again will add the item as a modifier. To delete  
12 a modifier, the modifier is selected and the Delete key pressed on the keyboard. To edit a  
13 modifier, either the modifier is double clicked or the Enter key is pressed.

14           Sub-modifiers represent the last level of modifiers that can be assigned to a menu  
15 tree. To add sub-modifiers, the modifier to which sub-modifiers are to be assigned is selected.  
16 Then, the focus is set on the sub-modifier window by clicking inside the Sub-Modifier window  
17 as follows: (1) clicking on Edit>Add Sub-Modifier; (2) pressing Ctrl + N; (3) right mouse  
18 clicking in the Sub-Modifiers window, then clicking on Add Sub-Modifiers or (4) clicking on the  
19 Add icon from the toolbar. If a menu is being built from scratch, the procedure is to enter the  
20 Long Name, Short Name, Code and Price in a Sub-Modifier dialog box similar to the Modifier  
21 dialog box shown in FIG. 2. As with modifiers, the Long Name is the full descriptive name of  
22 the item. The Short Name is the abbreviated name that will be displayed on the handheld device.  
23 The Code is the numeric or alphanumeric code for the item. As before, if there is an existing

1 database, the existing database can be browsed and menu items retrieved from the database.  
2 Clicking on the Browse button will bring up the existing database of menu items. The item to be  
3 added is then selected and OK clicked. The fields will then be filled with the information from  
4 the database. Clicking on OK again will add the item as a sub-modifier. To delete a sub-  
5 modifier, the sub-modifier is selected and the Delete key depressed on the keyboard. To edit a  
6 sub-modifier, either the sub-modifier is double clicked or the Enter key is pressed.

7           Menu categories are created from the root. Some examples of categories are  
8 Appetizers, Soups, Salads, Entrees, Desserts, etc. The first step is to click on Menu in the menu  
9 tree window. Categories are added by (1) clicking on the Add Category icon from the toolbar;  
10 (2) clicking on Edit > Add Category or (3) pressing Ctrl + T. As shown in FIG. 3, Menu  
11 Category dialog box 11 then appears in which to enter the Long and Short names for the menu  
12 category.

13           To add menu items to categories, the menu category which is being built is  
14 clicked. For example, if items are being added to Appetizers, the Appetizers branch is clicked  
15 on. Then the Edit > Add Item is clicked on or Ctrl + N pressed. As before, if a menu is being  
16 built from scratch, the procedure is to enter the Long Name, Short Name, Code, Prep Time,  
17 Recipe and Price into the Menu Item dialog box 12 shown in FIG. 4. The Long Name is the full  
18 descriptive name of the item. The Short Name is the abbreviated name that will be displayed on  
19 the handheld device. The Code is the numeric or alphanumeric code for the item. Prep Time is  
20 the time it takes to prepare the meal and Recipe would include preparation methods and  
21 ingredients that are used in the preparation of the item. If there is an existing database, the  
22 existing database can be browsed and menu items retrieved from the database. Clicking on the  
23 Browse button will bring up the existing database of menu items. The item to be added is then

1 selected and OK is clicked. The fields will then be filled with the information from the database.  
2 Clicking on OK again will add the item to the category.

3           Once the menu items have been entered, it may be desired to assign some  
4 modifiers to the menu items. For example, it may be desired to assign meat temperature to a  
5 steak order. To accomplish this, first the modifier to be assigned is selected, then the menu item  
6 on the tree view that is to be assigned the modifier is clicked on and then Edit > Assign Modifier  
7 is clicked on. Or, the modifier can simply be dragged and dropped onto the menu item to link  
8 them. A dialog box is then displayed asking if this modifier is a required modifier. If it is a  
9 required modifier, the display icon will be red but if it is a non-required modifier the display icon  
10 will be green. As many modifiers as are applicable can be assigned. If any changes are made to  
11 the modifiers, those changes will be automatically reflected throughout the menu tree.

12           Once the modifiers have been entered, it may be desired to assign sub-modifiers  
13 to the modifiers items. For example, it may be desired to add Honey Mustard as a sub-modifier  
14 to Dressing. To accomplish this, first the modifier to be assigned a sub-modifier is selected, then  
15 the sub-modifier window is clicked on, then Edit > Add Sub Modifier is clicked on, Ctrl+N  
16 entered or the Add icon from the toolbar is clicked on. Or, the sub-modifier can simply be  
17 dragged and dropped onto the modifier to link them.

18           When the menu has been completely configured, it can be previewed on a POS  
19 emulator on the desktop to verify that the menu is correctly configured before downloading it to  
20 the handheld device. To preview, File > Preview Database is clicked on or the Preview Database  
21 icon from the toolbar is clicked on. The handheld POS emulator on the desktop can then be run.  
22 If the configuration is deemed acceptable, the handheld device is connected to the desktop PC to  
23 ensure that a connection has been established; the POS application on the handheld device is

1 exited and File > Download Database is clicked on or the Download Database icon from the  
2 toolbar is clicked on. If there is an existing menu database on the handheld device, the system  
3 will ask if the existing database should be replaced. Yes is clicked if existing database  
4 replacement is desired.

5 A database function enables the creation of, e.g., a breakfast menu, lunch menu  
6 and dinner menu and downloading them to a handheld device. Functions available are (1)  
7 creating a new database; (2) opening an existing database; (3) saving a database under a different  
8 name. To access these functions, File is clicked on the menu bar.

9 The preferred embodiment encompasses customized layout, views and fonts. To  
10 set the focus on the view it is desired to change, click inside the desired window. The main  
11 customizing dialog box is accessed by clicking on View > Customize View. A dialog box 13, as  
12 shown in FIG. 5, will be displayed including tabs that allow the following options: selection of  
13 Columns to display in the list view by choosing and arranging the fields to display in the  
14 Modifiers and Sub-Modifiers windows; formatting Columns by specifying the column widths  
15 and justification; selecting Filter allows restricting the list to display only the items that meet  
16 certain criteria. For example, display of modifiers with codes between 500 and 550. Selecting  
17 Sort allows sorting the modifiers or sub-modifiers according to any of the available fields such as  
18 Name, Code or Price. Selecting Style facilitates choice of font type, style, size, etc. To change  
19 the font in a particular window, click on View > Fonts or right mouse click in the desired  
20 window and then click on Fonts. To change the size of the windows, drag the borders of the  
21 windows to expand or contract the size of the windows. To change the column widths, simply  
22 drag the edge of the column headers to increase or decrease the column widths.

1           A communications control program monitors and routes all communications to  
 2 the appropriate devices. It continuously monitors the wireless network access point and all other  
 3 devices connected to the network such as pagers, remote devices, internet Web links and POS  
 4 software. Any message received is decoded by the software, and then routed to the appropriate  
 5 device. No user action is needed during operation of the software once the application has been  
 6 launched. To launch the communications control module, a Wireless Traffic icon is clicked on  
 7 the desktop PC. When the program loads, the screen shown in FIG. 6 appears. Messages  
 8 received are logged in the window 14 shown in FIG. 6 with a time stamp. The messages are also  
 9 logged to a file on the hard drive. This provides a mechanism to monitor all traffic across the  
 10 network (possibly useful for troubleshooting, or maintenance, but not necessary for normal  
 11 operation). The program may be minimized so the screen is not displayed on the desktop, but it  
 12 must be running for proper communications to exist between all devices on the network.

13           As stated, the preferred embodiment of the present invention includes the use of  
 14 and compatibility with GUI technology. A drag-and-drop approach is used for organizing the  
 15 tree structure 2 in the generated menu. Drag-and-drop is also used for assigning modifiers  
 16 (modifiers can be dragged from the modifiers window 5 and dropped onto the menu item 4 for  
 17 assignment). In-cell editing results in fast editing of items in building the menus. Customizable  
 18 fonts enable users to change font types, style and size. Customizable layouts enable users to  
 19 resize windows, change icons and display preferences. The inventive approach provides for  
 20 fully persistent storage between sessions, even if a session is improperly or abruptly terminated.  
 21 Font and the tree state (i.e., which nodes are expanded/collapsed) are stored between sessions.  
 22 Layout for modifiers and sub-modifiers list views (filter, columns, formatting, font, etc.) are  
 23 stored between sessions. The last database used is likewise stored between sessions. Splitter

1 views allow the user to see different views at the same time. Each view is displayed on its own  
 2 section of the screen. Views can be resized via the keyboard or a mouse by simply dragging the  
 3 splitter in the middle.

4 An automated function is provided to import existing POS databases into the  
 5 inventive menu generation system and, as discussed above with respect to the detailed example  
 6 of how to use the preferred embodiment, an automated download procedure is provided to  
 7 transfer the desktop database onto a handheld device and/or Web page. Also as discussed, the  
 8 preferred embodiment facilitates preview of the handheld device or Web page version of the  
 9 POS menu on the desktop before downloading and configuration. Customizable desktop menu  
 10 generation is contemplated, as discussed above, in the form of customizable fonts, columns,  
 11 layouts, etc. The inventive approach also includes templates for common modifiers that can be  
 12 assigned to similar menu items. The preferred embodiment also supports multiple databases,  
 13 thus providing for the creation and storing of different menu databases on handheld devices such  
 14 as breakfast, lunch or dinner menus. The user can then select the appropriate database to reflect  
 15 the time of day.

16 FIG. 7 is a schematic representation of a point of sale interface 15 for use in  
 17 displaying a page-type menu 16 created using the inventive menu generation approach. As can  
 18 be seen from FIG. 7, the page menu is displayed in a catalogue-like point-and-click format  
 19 whereas the master menu, FIG. 1, is displayed as a hierarchical tree structure. Thus, a person  
 20 with little expertise can “page through” to complete a transaction with the POS interface and  
 21 avoid having to review the entire menu of FIG. 1 to place an order. A PDA or Web page format  
 22 could appear like FIG. 7 or the display could be configured for particular requirements since  
 23 fully customizable menu generation and display are contemplated.

1           The POS interface on the handheld device supports pricing in the database or  
2 querying prices from the POS server. The POS device also can be customized with respect to  
3 “look and feel” for the particular version. As can be seen in FIG. 7, the POS interface provides  
4 for billing, status and payment with respect to orders. A myriad of options can be provided  
5 depending on the application.

6           Advanced database functions are provided in the preferred embodiment of the  
7 invention, including an automated download process onto handheld devices and/or Web sites. In  
8 the preferred embodiment, the menu generation system of the present invention uses an API  
9 called ActiveX Data Objects (“ADO”) for database access. ADO is useful in a variety of  
10 settings. It is built on top of OLE DB and can be used to talk to databases and, in the future, any  
11 data source with any OLE DB driver. Advanced querying is supported. The database can be  
12 queried on virtually all fields. Queries can be built using SQL syntax for experienced users or  
13 can be created using a query builder which guides users through the creating process. Advanced  
14 error handling is supported. Errors occurring at run time can be trapped. A descriptive message  
15 is displayed to alert the user and provide error information. However, the application does not  
16 terminate when the errors happen. The source code is easy to maintain and modify, thus  
17 allowing for on time delivery of customized versions of the software. The advanced database  
18 functions produce well-designed databases that accommodate growth and scalability

19           The inventive menu generation approach provides a solution for the pervasive  
20 connectivity and computerization needs of the restaurant and related markets. The inventive  
21 solution includes automatic database management and synchronization, PDA and handheld  
22 wireless operating system integration and optimization, wireless communications and internet  
23 connectivity, user interface design, and graphics design.

TOP SECRET

1 In the preferred embodiment, the menu generation approach of the present  
2 invention uses Windows CE<sup>®</sup> as the operating system for the handheld devices. Windows CE<sup>®</sup>  
3 provides the benefits of a familiar Windows 95/98/NT<sup>®</sup> look and feel, built-in synchronization  
4 between handheld devices, internet and desktop infrastructure, compatibility with Microsoft  
5 Exchange<sup>®</sup>, Microsoft Office 9<sup>®</sup> and TCP/IP quick access to information with instant-on feature.

6 Windows CE<sup>®</sup> provides a basic set of database and communication tools for  
7 developer use. However, interfacing with these tools to provide application specific results can  
8 be a complex task. In addition to the menu generation described above, a set of software  
9 libraries described herein in conformance with the present invention not only enhances the basic  
10 Windows CE<sup>®</sup> functionality by adding new features but also maximizes the full potential of  
11 wireless handheld computing devices. Such features include fast synchronization between a  
12 central database and multiple handheld devices, synchronization and communication between a  
13 Web server and multiple handheld devices, a well-defined API that enables third parties such as  
14 POS companies, affinity program companies and internet content providers to fully integrate  
15 with computerized hospitality applications, real-time communication over the internet with direct  
16 connections or regular modem dialup connections and support for batch processing that can be  
17 done periodically throughout the day to keep multiple sites in synch with the central database.

18 The synchronous communications control module discussed above provides a  
19 single point of entry for all hospitality applications to communicate with one another wirelessly  
20 or over the Web. This communications module is a layer that sits on top of any communication  
21 protocol and acts as an interface between hospitality applications and the communication  
22 protocol. This layer can be easily updated to work with a new communication protocol without  
23 having to modify the core hospitality applications. The single point of entry works to keep all



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1 wireless handheld devices and linked Web sites in synch with the backoffice server (central  
2 database) so that the different components are in equilibrium at any given time and an overall  
3 consistency is achieved. For example, a reservation made online is automatically communicated  
4 to the backoffice server which then synchronizes with all the wireless handheld devices  
5 wirelessly. Similarly, changes made on any of the wireless handheld devices will be reflected  
6 instantaneously on the backoffice server and the other handheld devices.

7 The software applications for performing the functions falling within the  
8 described invention can be written in any commonly used computer language. The discrete  
9 programming steps are commonly known and thus programming details are not necessary to a  
10 full description of the invention.

11 A simple point-to-point wireless capability is contemplated which permits simple  
12 digital messages to be sent from the wireless handheld devices to a receiver in a beeper and/or  
13 valet parking base-station. The POS interface of FIG. 7 is representative of the display on a  
14 typical wireless device used in conformity with the invention. A simple protocol is used to  
15 acknowledge receipt of the message and thus simultaneous communication is not necessary,  
16 which reduces the cost of the wireless link. The range of the wireless link is determined by the  
17 characteristics of the radio transceiver. Adding a wireless link allows paging of beeper equipped  
18 customers directly from the operator interface on the wireless handheld devices and  
19 communication to and from various input/output transmitters and receivers to update the status  
20 of the order, reservation or other information and thus further reduce the workload on the  
21 operator and enable operations to proceed much faster. This link could also be hardwired or  
22 otherwise implemented using any two-way messaging transport.

FOOTNOTES

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.

THE OFFICIAL RECORD

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That which is claimed is:

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

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

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

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

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

4. An information management and synchronous communications system in accordance with claim 3, wherein selections from the second menu are capable of being 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;

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- 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                   a.    a central database containing hospitality  
9                    applications and data,
- 10                   b.   at least one wireless handheld computing device on  
11                    which hospitality applications and data are stored or  
12                    displayed,
- 13                   c.   an application program interface, and
- 14                   d.   a communications control module;
- 15

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

20  
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           32. An information management and synchronous communications system for use  
5 with wireless handheld computing devices and hospitality applications comprising:  
6

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

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

- 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.

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

EXHIBIT 1007

1

POS - Menu Explorer

File Edit View Help

Menu

- Appetizers
- Desserts
- Drinks
- Entrees
  - Chicken
  - Red Meat
    - BEEF TOURNEO
    - LAMB
    - NY STRIP
    - VEGETABLES
    - MEAT TEMPERATURE
      - MED RARE
      - MED WELL
      - MEDIUM
      - RARE
      - WELL
    - VEAL SCALOPPINI
  - Seafood
  - Salads
  - Sandwiches
  - Soups

Modifier

Modifier	Code	Price
CHEESE	1107	0
CONDIMENTS	3984	0
DRESSING	1084	0
MEAT TEMPERATURE	4083	0
PREPARED	3481	0
QUANTITY	1466	0
VEGETABLES	3486	0

Sub Modifier

Sub Modifier	Code	Display
NO	3241	NO
EXTRA	3242	EXTRA
SIDE	3243	SIDE

Ready

MENU TREE

1/6

MODIFIERS WINDOW

SUB-MODIFIERS WINDOW

FIG. 1

A screenshot of a dialog box titled "Modifier" with a close button (X) in the top right corner. The dialog contains four input fields: "Long Name:", "Short Name:", "Code:", and "Price:". The "Price:" field contains the number "0". At the bottom of the dialog are three buttons: "OK", "Cancel", and "Browse". A reference numeral "10" is located to the right of the dialog box.

FIG.2

A screenshot of a dialog box titled "Menu Category" with a close button (X) in the top right corner. The dialog contains two input fields: "Long Name:" and "Short Name:". At the bottom of the dialog are three buttons: "OK", "Cancel", and "Browse". A reference numeral "11" is located to the right of the dialog box.

FIG.3

TOP SECRET

Menu Item ✕

Long Name:  Code:

Short Name:  Price:  Prep. Time:

Recipe

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.

Browse

OK      Cancel

12

FIG. 4

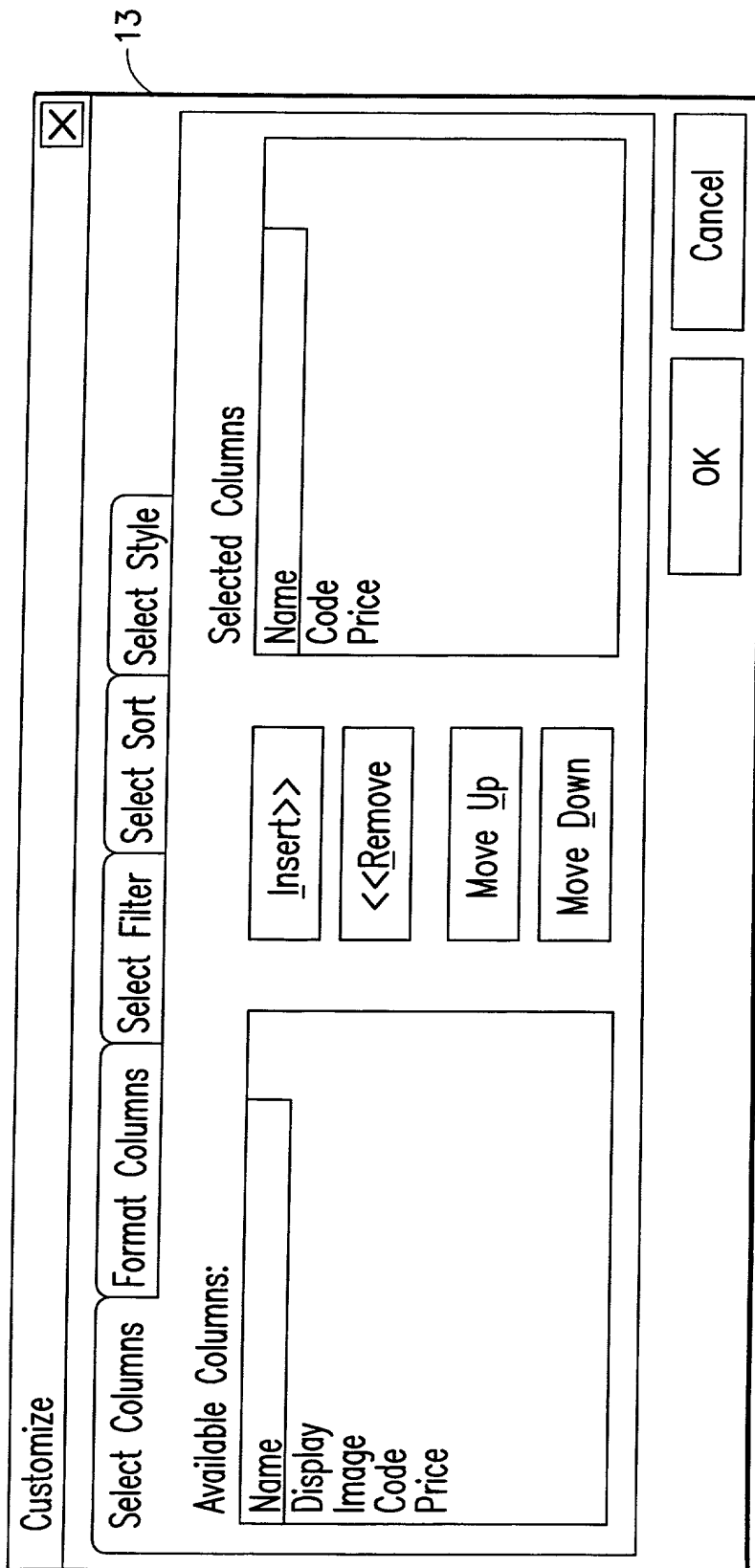


FIG.5

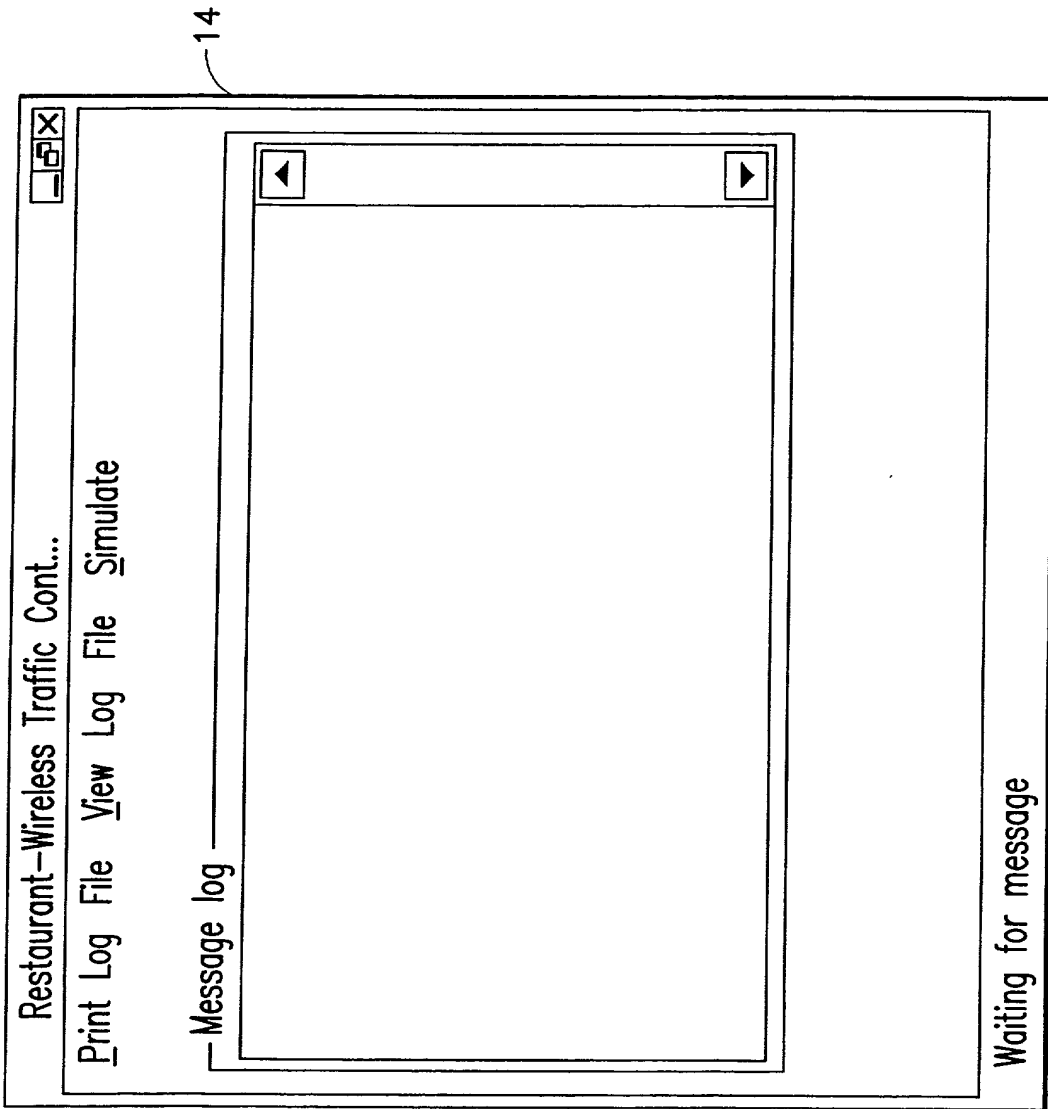


FIG. 6



POScce-System

Choose Item: Tbl67 5st 2

App	Dessert	Drinks	Entrees
Salads	Sdwch	Soups	

Direction:

Select Guest to Order for:

1  2

Last Selection

15

16

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>
--------------------	---------------------------	--	---------------------------------------	-------------------------

YES  NO

YES  NO

YES  NO

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

Provisional Application No.

Date of Filing (day, month, yr)

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>
--------------------------------------	--------------------	---

<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  
Residence 5104 Seagrave Cove, San Diego, CA 92130 date  
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 Luckett 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 <sup>Street</sup> 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 of 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

3125-400205

**CLAIMS AS FILED - PART I**

SMALL ENTITY TYPE  OR OTHER THAN SMALL ENTITY

	(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"/>		

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**

SMALL ENTITY OR OTHER THAN SMALL ENTITY

	(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"/>				

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 MWLDER1 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	CH	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.
1	/												
2		/											
3		/											
4		/											
5		/											
6		/											
7		/											
8		/											
9		/											
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43		/											
44		/											
45		/											
46		/											
47		/											
48		/											
49		/											
50		/											
TOTAL IND.		↓		↓		↓					↓		↓
TOTAL DEP.		↓		↓		↓					↓		↓
TOTAL CLAIMS													
51		/											
52		/											
53		/											
54		/											
55		/											
56		/											
57		/											
58		/											
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96		/											
97		/											
98		/											
99		/											
100		/											
TOTAL IND.		134		↓		↓					↓		↓
TOTAL DEP.		92		↓		↓					↓		↓
TOTAL CLAIMS		105											

\* MAY BE USED FOR ADDITIONAL CLAIMS OR ADVERTISEMENTS

FORM PTO-2022 (1-98)

52  
39  
91  
13  
164

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