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(54) **MEDICAL SCREENING DEVICE**

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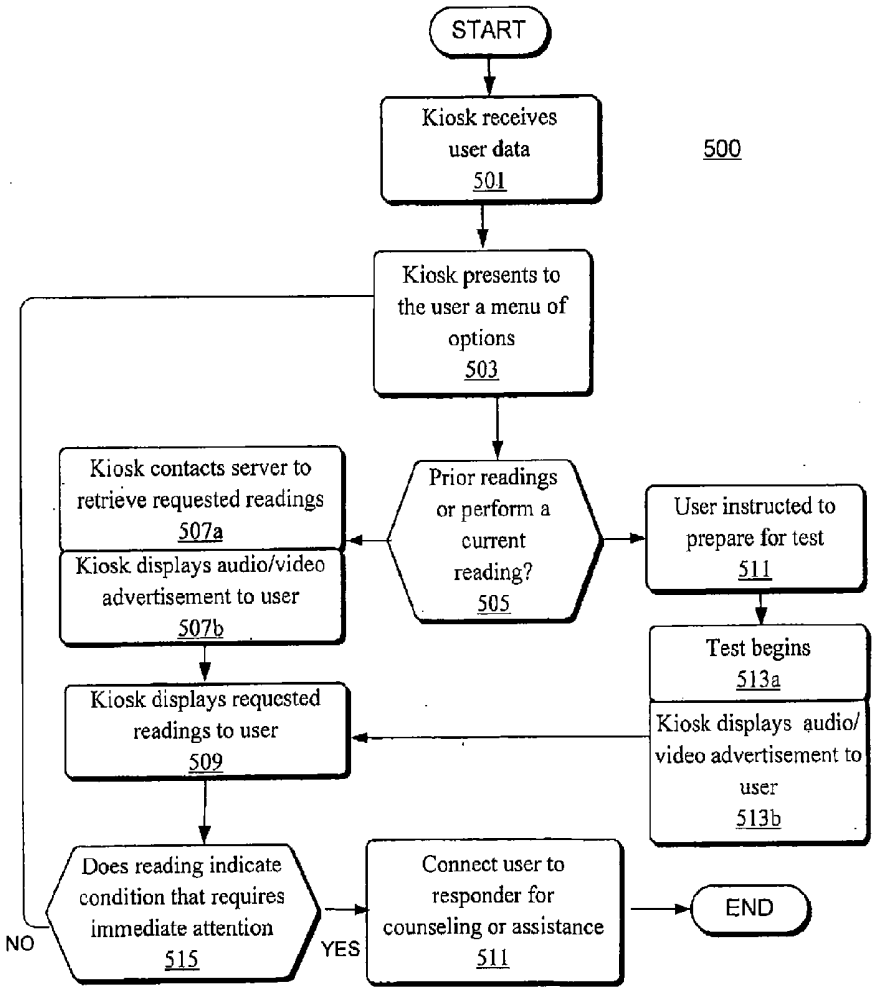
(57) **ABSTRACT**

Embodiments of the invention pertain providing authenticated health information for purposes of privacy, rewards, or incentives. In an embodiment of the invention, biometric measurement devices coupled with a communications infrastructure implement a system of secure information exchange and enhanced data security. In an embodiment of the invention, a security/verification system is built to provide verification of a user's identity.



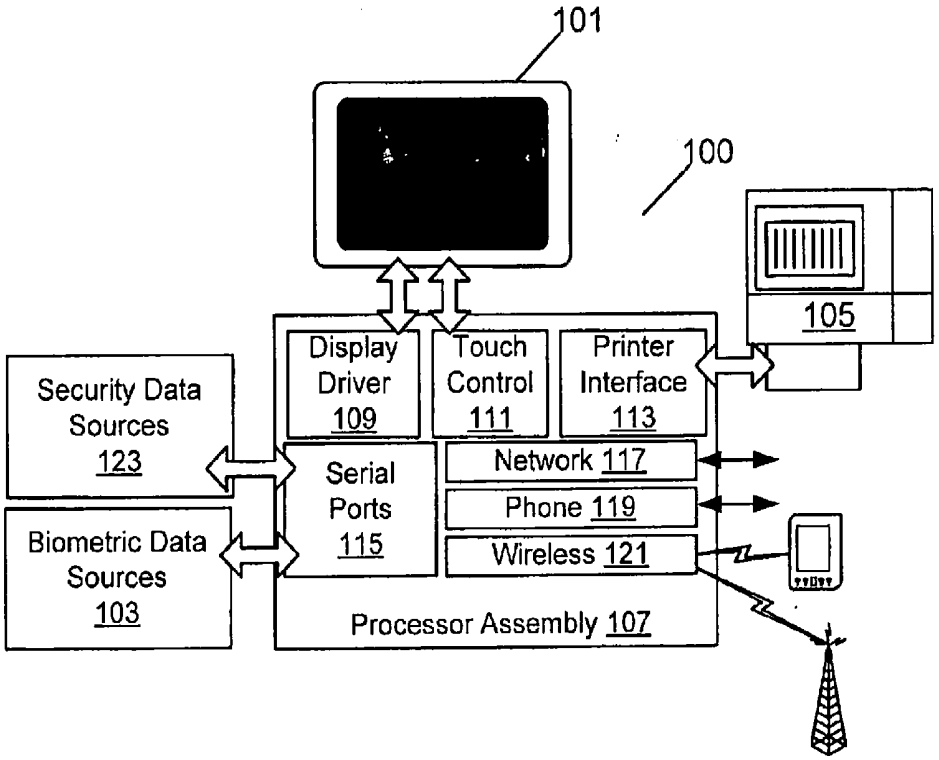

101
100
105
Display Driver 109
Touch Control 111
Printer Interface 113
Security Data Sources 123
Serial Ports 115
Network 117
Phone 119
Wireless 121
Biometric Data Sources 103
Processor Assembly 107

FIGURE 1

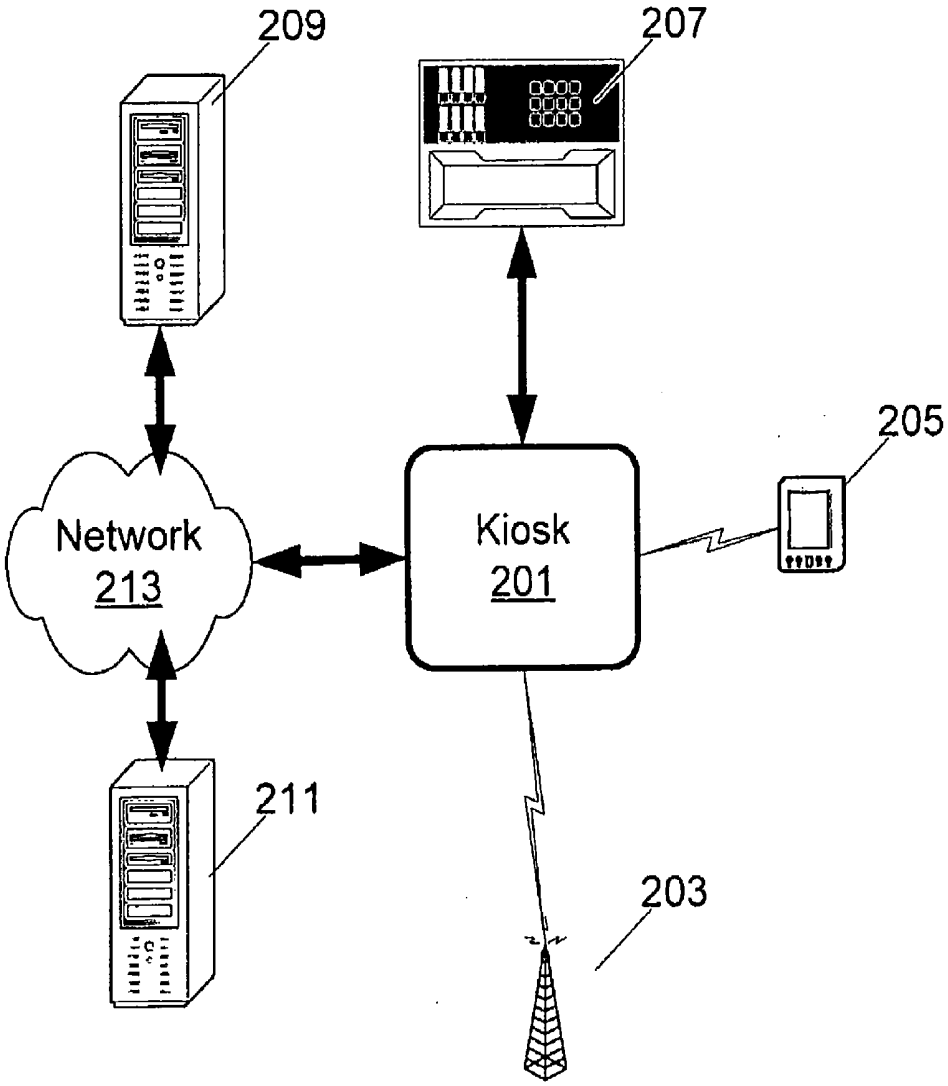


FIGURE 2

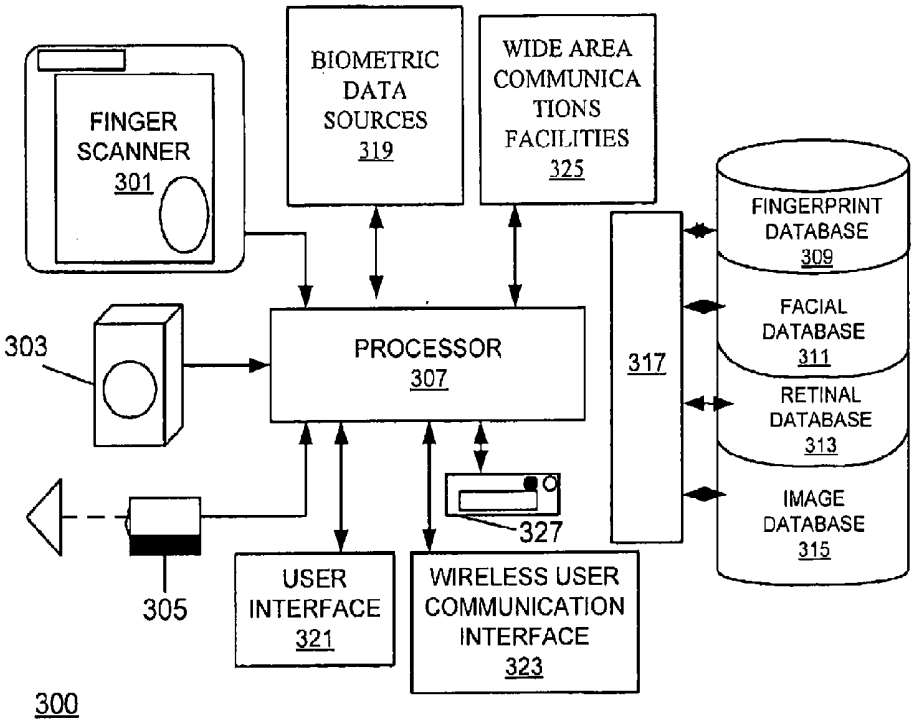

FINGER SCANNER 301
BIOMETRIC DATA SOURCES 319
WIDE AREA COMMUNICATIONS FACILITIES 325
FINGERPRINT DATABASE 309
FACIAL DATABASE 311
RETINAL DATABASE 313
IMAGE DATABASE 315
317
303
PROCESSOR 307
327
305
USER INTERFACE 321
WIRELESS USER COMMUNICATION INTERFACE 323
300

FIGURE 3

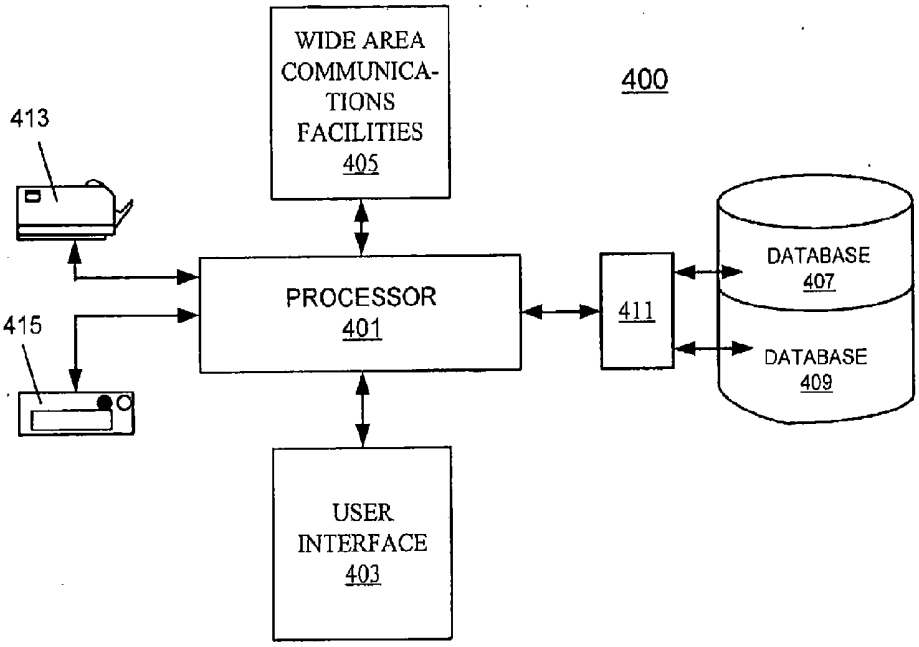

WIDE AREA COMMUNICA-TIONS FACILITIES 405
400
413
415
PROCESSOR 401
411
DATABASE 407
DATABASE 409
USER INTERFACE 403

FIGURE 4

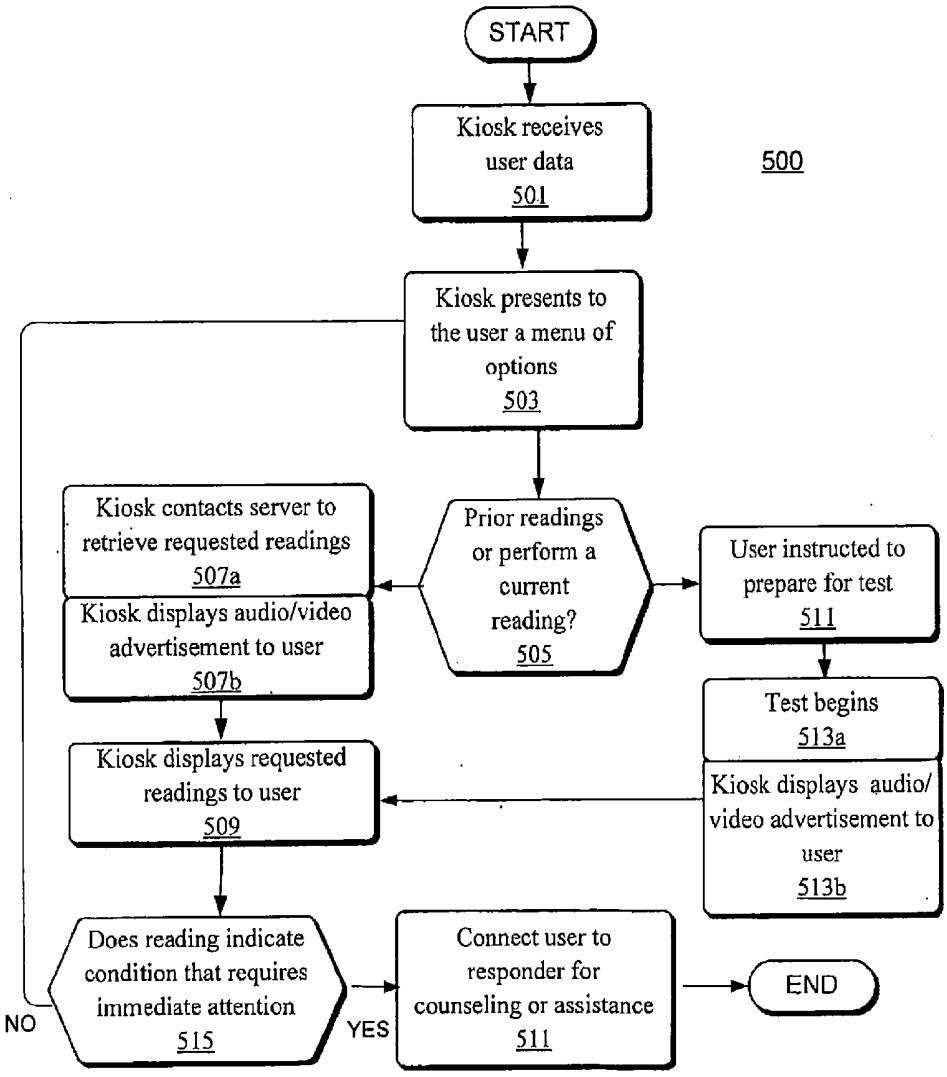

START
Kiosk receives user data 501
500
Kiosk presents to the user a menu of options 503
Prior readings or perform a current reading? 505
Kiosk contacts server to retrieve requested readings 507a
Kiosk displays audio/video advertisement to user 507b
User instructed to prepare for test 511
Test begins 513a
Kiosk displays audio/video advertisement to user 513b
Kiosk displays requested readings to user 509
Does reading indicate condition that requires immediate attention 515
NO
YES
Connect user to responder for counseling or assistance 511
END

FIGURE 5

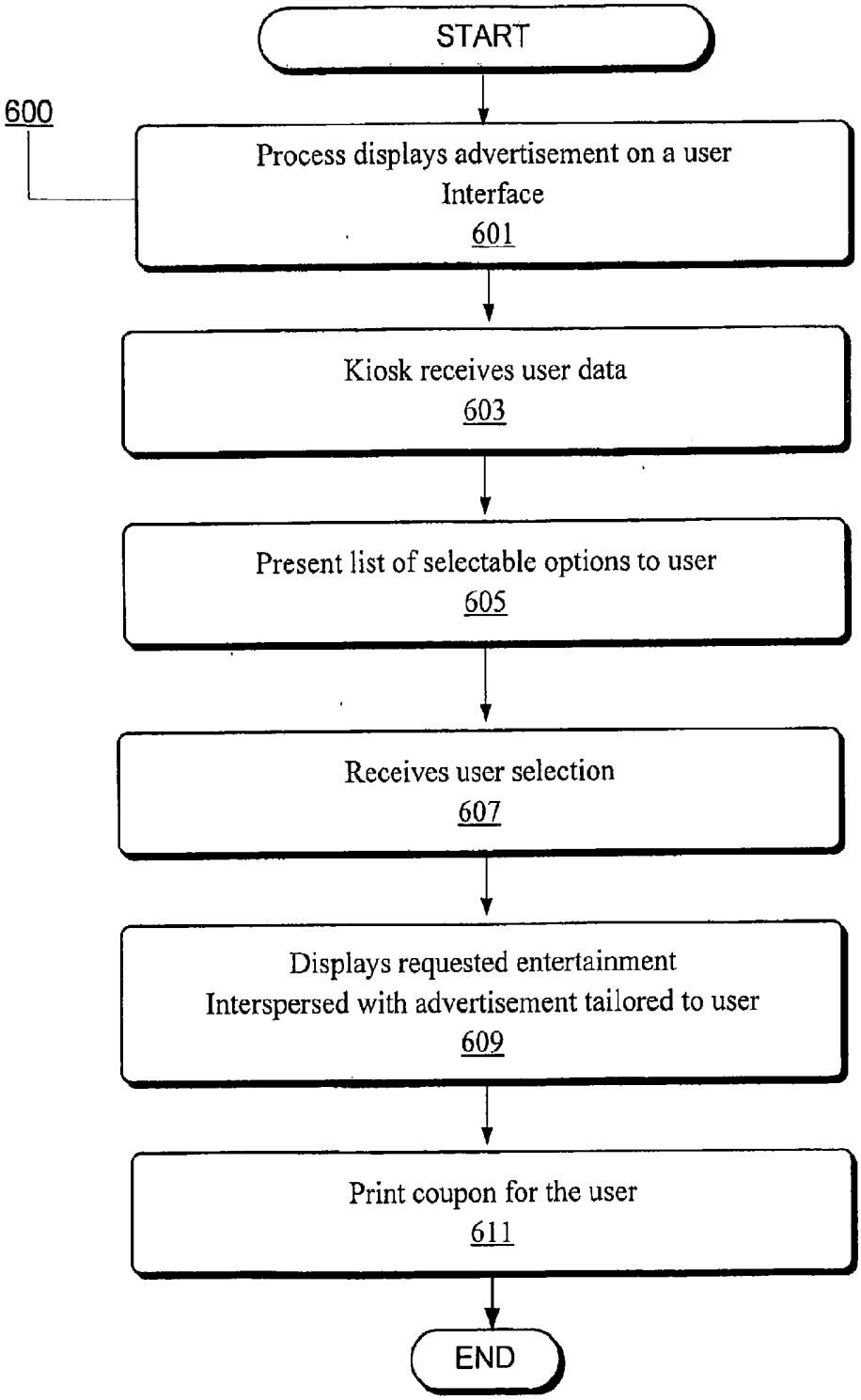

START
600
Process displays advertisement on a user Interface
601
Kiosk receives user data
603
Present list of selectable options to user
605
Receives user selection
607
Displays requested entertainment Interspersed with advertisement tailored to user
609
Print coupon for the user
611
END

FIGURE 6

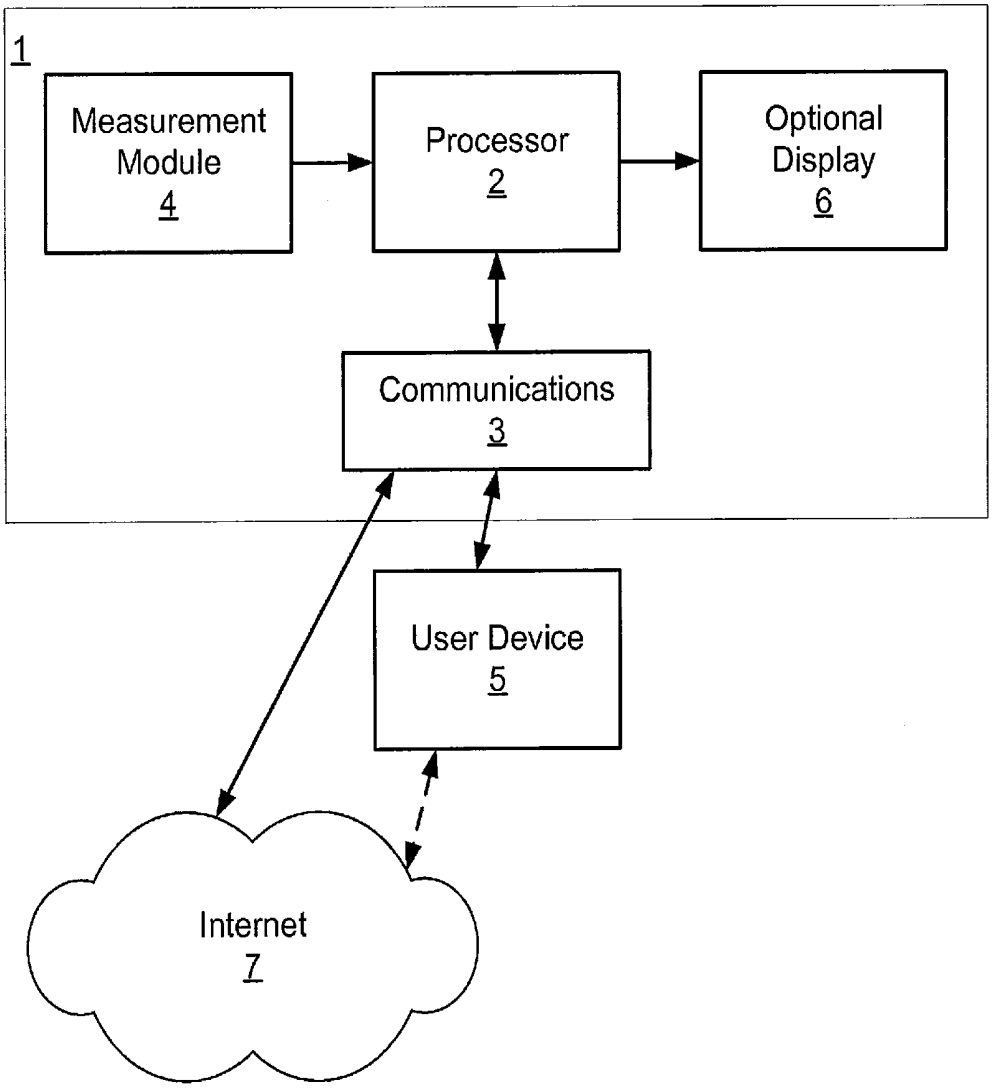

1
Measurement Module 4
Processor 2
Optional Display 6
Communications 3
User Device 5
Internet 7

FIG. 7

MEDICAL SCREENING DEVICE

[0001] This application is a continuation of application Ser. No. 14/035,949 filed on Sep. 25, 2013, which is a continuation of application Ser. No. 13/114,880, filed on May 24, 2011, which is a continuation of application Ser. No. 11/560,322, filed on Nov. 15, 2006, now U.S. Pat. No. 7,988,628, which is a continuation-in-part of application Ser. No. 11/550,663, filed on Oct. 18, 2006, now U.S. Pat. No. 7,988,627, and which is also a continuation of application No. 61/894,278, filed on Oct. 22, 2013.

FIELD OF THE DISCLOSURE

[0002] The disclosure relates to patient health monitoring and, more particularly, relates to providing identification of a user in a health measurement system.

BACKGROUND OF THE INVENTION

[0003] A number of companies have successfully provided public kiosk blood pressure machines for a number of years. These devices allow users to obtain a reading of their blood pressure during a break while shopping etc. Users are concerned about their blood pressure primarily for health reasons, and are typically unable to otherwise obtain a reading without visiting a doctor or other health practitioner. The blood pressure machines are thus very popular and millions of people have availed themselves of the services provided by such machines. Blood pressure kiosks can be used for advertising purposes to generate an additional revenue stream such as by having large consumer product companies advertise. However, such known systems are less than ideal for a number of reasons that will become apparent hereinafter.

[0004] The present inventor has been instrumental in the biometrics area for almost 30 years. In that time, he has created new and useful systems and advanced the state of the art. In one example he has created a system of blood pressure kiosks in university settings by deploying a number of LifeClinic® model 9000 units to colleges free of charge. Although the number of units deployed at that time was small, the exercise did show that the machines were potentially popular with university students and staff However, that implementation did not employ or benefit from the structures, methods, and techniques that are described herein for improving the state of the art.

[0005] This background section is presented as an aid to the reader interested in further research, and is not intended to, itself, be prior art, or to be an admission that anything discussed is actually prior art. Readers interested in the prior art are encouraged to search for printed publications or other actual prior art, perhaps using the foregoing as guidance.

SUMMARY OF THE DISCLOSURE

[0006] In an embodiment, a portable health measurement kit is provided for measuring one or more health parameters of a user. The health measurement kit includes a first measurement tool configured to measure a health parameter of the user, a verifier configured to determine the user's identity, a communication interface for communicating with a second measurement tool configured to measure a second health parameter of the user, and a processor configured to facilitate communications between the kit and the second measurement tool.

[0007] The first health parameter may be user weight and the first measurement tool may be a scale. Moreover, the verifier configured to determine the user's identity may include a footprint reader.

[0008] In an embodiment, the second measurement tool is a user-worn cuff for measuring user blood pressure.

[0009] In another embodiment, a portable health measurement kit is provided for measuring one or more health parameters of a user, including a measurement tool configured to be worn on the user and to measure a health parameter of the user, a verifier, associated with and co-located with the measurement tool, configured to determine the user's identity and a communication interface for transmitting or transferring health parameter measurements securely associated with the user from the kit to another entity.

[0010] The measurement tool configured to be worn on the user is a wearable pedometer in an embodiment, and the verifier associated with the measurement tool may include a fingerprint reader.

[0011] The communication interface for transmitting or transferring health parameter measurements securely associated with the user from the kit to another entity may include a wireless communication interface.

[0012] Alternatively, the communication interface may include a pluggable wired communication interface.

[0013] Other features according to various embodiments of the invention will be discussed in the examples below.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0014] FIG. **1** is a schematic diagram of a kiosk usable within embodiments of the invention;

[0015] FIG. **2** is a schematic diagram of the network operating environment **300** of the kiosk within an embodiment of the invention;

[0016] FIG. **3** is a schematic diagram of a security-enhanced biometric kiosk unit according to an embodiment of the invention;

[0017] FIG. **4** is a schematic diagram of a non-biometric entertainment-enhanced kiosk unit according to an embodiment of the invention;

[0018] FIG. **5** is a flow chart showing a process of user alert and consultation for unusual reading conditions according to an embodiment of the invention;

[0019] FIG. **6** is a flow chart showing a process of providing entertainment and advertising to users via a non-biometric kiosk according to an embodiment of the invention; and

[0020] FIG. **7** is a simplified schematic drawing of an exemplary home kit.

DETAILED DESCRIPTION OF THE INVENTION

[0021] As discussed above, certain embodiments of the invention pertain to biometric measurement devices coupled to a wide area network such as the Internet or other communications infrastructure and/or network. The link to the network may be implemented by way of wired or wireless connections or a combination thereof, and while high speed connections such as DSL are preferred, slower connections may instead be used. The physical structure and features of a biometric kiosk usable within embodiments of the invention was described in detail in the related application referenced above, and that description is incorporated by reference and will thus not be repeated at length herein.

[0022] FIG. **1** is a schematic diagram of a kiosk usable within embodiments of the invention. The kiosk **100** comprises biometric data sources **103** (e.g., blood pressure cuff and associated electronics, scale and associated electronics, etc.), a display **101** and a printer **105**.

[0023] These elements **101**, **103**, **105** are linked, typically by wired connections, to a processor assembly **107**. The display **101** interfaces with the processor assembly **107** via a display driver **109** and a touch control module **111**. The touch control module **111** receives and processes touch screen inputs from the display **101**. The biometric data sources **103** interfaces with the processor assembly **107** via serial ports **115**. Finally, the printer **105** interfaces with the processor assembly **107** via a printer interface **113**.

[0024] The processor assembly **107** also comprises data links to external data sinks/sources. For example, in the illustrated embodiment of the invention, the processor assembly **107** comprises a network communication module **117**, a phone communication module **119**, and a wireless communication module **121**. As will be discussed in greater detail below, the wireless communication module **121** allows connectivity to a cellular network and/or to local wireless devices (e.g., a PDA or cell phone) via a short range protocol such as Bluetooth. The network communication module **117** provides connectivity (wired or wireless) to one or more networks such as a local area network (LAN) and the Internet.

[0025] In addition to the features and elements noted above, the kiosk **100** further comprises a plurality of security data sources **123** linked to kiosk **100** via the serial ports **115** or otherwise as appropriate. The security data sources **123** comprise equipment usable to gather user-identifiable information for purposes of user verification. This is important both to protect sponsors from fraud as well as to protect users from unauthorized access to their biometric or other data. The security data sources **123** may include one or more cameras for retinal scanning, face recognition, and visual record-keeping purposes (e.g., for potential verification of past test results), as well as a fingerprint scanner for additional security and cross-checking for validation.

[0026] FIG. **2** is a schematic diagram of the network operating environment **200** of the kiosk within an embodiment of the invention. As illustrated, the kiosk **201** is communicably linked to a phone system **307**, such as via ordinary phone lines. The kiosk **201** is also linked wirelessly to a cellular network **203** and a local wireless device **205**, e.g., a Bluetooth equipped device. The local wireless link allows the user to use their own phone to communicate to or from the kiosk as well as to place a call through the kiosk to a customer service representative or advisor.

[0027] Finally, the kiosk **201** is linked via a network **213** to a number of networked data sources/sinks, e.g., servers **209**, **211**. In an embodiment of the invention, server **209** is an operator server of the company or other entity responsible for the kiosk. For example, LifeClinic® is the operator of kiosks that are placed in thousands of locations across the country. In this embodiment of the invention, the other server **211** is associated with a sponsor or other entity interested in receiving data from the kiosks as will be discussed in greater detail below.

[0028] The data transferred over the network links to/from one or both of servers **209**, **211** to/from the kiosk **100** includes in an embodiment of the invention any or all of the communication indicated herein, including but not requiring: waiver, identity, readings, demographics and other data from the kiosk **100**; instructions, video, communications, prior readings, and advertisements from the server(s) **209**, **211**.

[0029] FIG. **3** is a more detailed schematic diagram of a security-enhanced biometric kiosk unit according to an embodiment of the invention, showing the components and logical units of the system rather than the physical interconnections. Although the illustrated exemplary kiosk architecture includes features for both user verification and user security, it will be appreciated that aspects of the invention may be implemented using either or both sets of features.

[0030] The security-enhanced biometric kiosk **300** comprises at its core a processor **307** linked to various other system components. The processor may be of any suitable type including one or more microprocessors, programmable logic controllers, and so, and may be implemented within a personal computer, workstation, or other computing device, or may be integrated into the kiosk **100** in a customized form. Although the processor **307** is illustrated as being directly linked to individual components, it will be appreciated that the illustrated interconnections are exemplary. Components may be interconnected via other components and may also be interconnected by a common bus architecture.

[0031] As illustrated in FIG. **3**, the processor **307** is linked to a set of verification input devices including, in the illustrate arrangement, a fingerprint scanner **301**, a camera **303**, and a retinal scanner **305**. It will be appreciated that other types of verification devices may be used instead or in addition to those listed. Moreover, although the camera **303** and retinal scanner **305** are illustrated as separate components, they may share one or more components, e.g., optics, etc. As will be appreciated, commercial camera systems, both built in (e.g., in a lap top computer) and stand alone, exist that are capable of executing face tracking and face recognition tasks.

[0032] The fingerprint scanner **301**, camera **303**, and retinal scanner **305** are communicably linked to the processor **307**. The processor **307** is similarly linked to a series of databases through a database interface **317**. The illustrated databases include a fingerprint database **309**, a facial feature database **311**, a retinal feature database **313**, and an image database **315**. The processor **307** is also linked to other components of the kiosk including a user interface **321**, such as a screen, speaker, keyboard, buttons, etc. Additional components include biometric data sources **319** for kiosks that measure such information. The biometric data gathered by sources **319** can include parameters such as user weight, blood pressure, pulse rate, body fat and blood oxygen, or other parameters as will be appreciated by those of skill in the art.

[0033] The processor **307** is further linked to a wireless communication interface **323**. The wireless communication interface **323** provides a mechanism for wirelessly communicating with nearby electronic devices. For example, the wireless communication interface **323** is adapted in an embodiment of the invention to wirelessly call a user's cell phone and connect the user via wide area communications facilities **325** to a call center or emergency personnel. As will be discussed in greater detail below, this functionality allows a user to be connected to necessary personnel in the event of an abnormal biometric reading, such as an extremely high blood pressure reading. In this way, the user is given counseling and advice to facilitate appropriate treatment or explain any complications. The user may also call a number, e.g., a 1-800 or other toll-free number, to initiate a consultation or get answers to general questions.

[0034] The processor **307** may also be linked to a card reader **327**. A user may apply for and acquire a health information card, e.g., a co-branded magnetic stripe card promoted by the owner/operator and a credit card company or other enterprise. At the time that the user applies for the card, they preferably supply their name and address and may also be asked to respond to other questions that are of significance with respect to marketing. At that time as well, the customer may also be asked to sign a waiver at the information desk whereby they agree that their name and/or other information can be used for promotional and/or advertising purposes by the owner operator, etc. At the time that the user signs for and obtains the card, they may also have their personal security parameters gathered, e.g., face scan, retina scan, fingerprint, and so on. The user is then given a bar coded or magnetic coded loyalty card that encodes or is linked to his or her identification, address, etc. It will be appreciated that the user may instead sign up for the service on-line via the interface and connectivity of the kiosk itself, or from a personal computer or other networked computing device (e.g., personal digital assistant, Internet-enabled cell phone, etc.). In this case, the waiver may either be executed electronically or may be printed, executed, and mailed. The user card may be the user's credit card or other card carrying encoded user-specific identifying information.

[0035] When the user subsequently uses the kiosk, they are asked to scan their bar code by the bar code reader. This allows the kiosk to retrievably store the user's readings and also to access the user's name, address, etc. for promotional purposes. A waiver may appear on the display at this time as well. In addition, the data provided by a gift card or a credit card may also provide a buying history of the user to allow customization of messages and advertising. For example, the kiosk could recommend products similar to those that the user had purchased recently. Additionally, the kiosk may provide customized coupons based on the user's demographic data (race, class, income, age, ethnic origin, language, location, dwelling type, family size/type, gender, occupation, etc.) or buying history.

[0036] The fingerprint scanner **301** operates in a manner familiar to those of skill in the art, either alone or in conjunction with processes executed on processor **307** or other component. The fingerprint scanner **301** obtains an image of a user's finger compares this image to pre-scanned images, e.g., in database **309**, to determine the identity of the user by determining whether the patterns of ridges and valleys in the images match. Although the fingerprint scanner **301** may be of any suitable construction, it will be appreciated that fingerprint scanners generally utilize either optical or capacitive technologies.

[0037] Optical scanners generally employ a charge coupled device (CCD) to capture the print image. Typically, an analog-to-digital converter in the scanner system processes the analog electrical output of the CCD to generate a digital image. The fingerprint scanner may comprise a light source such as an LED array to facilitate image acquisition. Much like optical scanners, capacitive fingerprint scanners also generate an image of a fingerprint. However, rather than using photons, they employ changes in capacitance across the print. One advantage of capacitance type sensors is that they cannot be manipulated via an image of a fingerprint. Additionally, capacitive scanners can be made more compact than optical devices.

[0038] As noted above, the camera **303** can be used for either or both of image storage, i.e., for later verification, and face recognition. For image storage purposes, the camera **303** is linked via the processor **307** to an image database **315**. A photograph of each user is obtained by the camera **303** and stored, e.g., in database **315**, for later verification if needed.

[0039] For purposes of facial recognition, the camera **303** captures an image of the users face and uses this image to verify the user's identity. Human faces have certain distinguishable features or landmarks. For example, there are distinct dips and rises that make up different facial features. Depending upon the algorithm used, as many as 80 landmarks may be identified and used for recognition.

[0040] Examples of landmarks include the distance between a user's eyes, the width of a user's nose, depth of a user's eye sockets, shape or location of a user's cheekbones, shape or location of a user's jaw line, and the shape or location of a user's chin. Features of the landmark points are measured and translated to a unique numerical code or "faceprint" that represents the particular face. Pre-scanned faces, or related representations such as face prints, are stored in database **311** to facilitate later comparison for validation. Registration of a user's faceprint to be used for later verification may occur upon the user's first use of a kiosk system as described herein, or may be obtained elsewhere, e.g., at a registration desk.

[0041] The retinal scanner **305** obtains an image of the user's retina and compares this to prior scans, e.g. scans stored in database **313**, to verify a user's identity. Retinal scanners are commercially available, and operate in a manner similar to that described above, i.e. by matching a retina of interest, or characteristics thereof, to a validation image of a retina or to characteristics of such an image.

[0042] It will be appreciated that other identity verification techniques may be used additionally or alternatively to verify a user's identity. Other techniques include, but are not limited to, voiceprint recognition, vein pattern recognition, iris recognition, etc.

[0043] While the databases **309**, **311**, **313**, and **315** may be local to the kiosk, it is preferred that alternatively or additionally, there are databases that are accessible by the kiosk in question as well as other kiosks so that a user may access their information at any one of a global network of kiosks. Thus, the databases **309**, **311**, **313**, and **315** are preferably stored or replicated at one or more central servers and may be downloaded periodically or as needed, or may be queried rather than downloaded.

[0044] The aforementioned security and verification features are important not only to prevent unauthorized access to a user's private data, but also to protect sponsors or affiliates from fraud. For example, it is important for kiosk sponsors and affiliates who provide incentives linked to user health to be able to verify that the user is indeed the person that they purport to be.

[0045] One area where significant incentives may be provided and hence where enhanced security will be important is the area of insurance incentives. In particular, insurers will enroll with a kiosk system host to receive user medical information from such kiosks and to provide targeted advertising and incentives through the kiosks. In particular, a user may use any one of the global network of kiosks to take a measurement of interest, e.g., weight, body fat percentage, or blood pressure, and this information will be transmitted to the enrolled insurer. In an embodiment of the invention, the kiosk

displays a list of enrolled insurers to the user, and the user selects the appropriate company name.

[0046] If the user's current and prior measurements show a positive trend (e.g., losing body fat) at an acceptable rate (e.g., 2 pounds per week) or in an acceptable amount (e.g., 10 pounds), then the insurer will provide a reward to the user. Rewards can consist of rebates, gift cards, reduced insurance rates, and so on. Thus, users may be tempted to cheat to obtain the incentives, i.e., by having a friend in better health sit in as the user. To avoid fraud and cheating, it is important that the insurer be able to verify that the subscriber being rewarded has indeed made the appropriate improvements.

[0047] In an embodiment of the invention, the kiosk, whether providing health-related measurements or not, displays information of general interest to the user. For example, the kiosk may display a stock ticker or 5-day weather forecast.

[0048] Kiosks of the type described above can be used for a number of activities and interchanges that provide value to both the community and the sponsor or business supporting the machine. For example, the kiosk, whether or not it includes a biometric measurement facilities, can be used to provide entertainment such as via television or video. The entertainment content may be customized for the sponsor, e.g., a department store, or may be publicly available entertainment. In this embodiment of the invention, the entertainment provides a draw for customers who may not be interested in shopping or may be tired.

[0049] For examples, men accompanying women in a predominantly female-oriented store may prefer to rest at the kiosk. In an embodiment of the invention wherein the user identifies themselves by swiping a loyalty card, credit card, etc., the system can provide customized services. For example, if the system is able to access recent purchase history, it will supply appropriate coupons via the attached printer to encourage the user to avail themselves of the goods or services of the sponsor. More generally, a credit card or gift card's magnetic stripe may supply identity information both for customization of services and to track a user's biometric readings.

[0050] In this embodiment of the invention, the user may be presented with menu options to choose an activity. For example, a user may be asked to choose from sports scores, sports highlights, interviews, news, current affairs, exercise tips, etc. In another example of the invention, the kiosk provides one or more maps or informational items related to the store hosting the kiosk. Advertisements are run during these services and can be customized if the customer uses a personalized gift card or credit card.

[0051] A schematic diagram of an exemplary kiosk that omits biometric measurement and information facilities but that provides entertainment information such as via television, video, etc., is illustrated in FIG. **4**. The kiosk **400** is similar in some regards to that of FIG. **3**, and includes a processor **401**, a user interface **403**, wide area communications facilities **405**, and a set of databases **407**, **409**, linked to the processor **401** via a database interface **411**. The kiosk **400** includes a printer **413**, which may also be used in the kiosk **300** of FIG. **3**. The kiosk **400** also includes a card reader **415**. In overview, the non-biometric kiosk **400** as illustrated in FIG. **4** is usable to provide entertainment and advertising to users. The manner of operation according to a specific example will be given below by reference to the flow chart of FIG. **6**.

[0052] Returning now to the system illustrated in FIG. **3**, it was mentioned above that such a biometric measurement equipped kiosk can be used to obtain and provide biometric data of interest to a user and to provide an emergency alert to the user. In particular, certain biometric measurements can convey information sufficient to indicate whether the user may be in or about to enter a dangerous state. For example, blood pressure readings can indicate that a person is having, or is close to having, a stroke. In this case, the kiosk will call the user's cell phone automatically and connect the user to an emergency service, so that a paramedic may further diagnose and advise the user. This is especially useful for older users who may not be able to dial a help number. In particular, very high (or otherwise worrisome) readings cause the kiosk to connect the user's cell phone to the kiosk and then through to a call center representative for counseling. When communicating with the user's cell phone, the kiosk may target devices within a small enough radius to likely include the cell phone, e.g., 2 or 3 feet. The connection between the kiosk and the cell phone may be executed via Bluetooth or other suitable short-range wireless protocol.

[0053] A process of operation according to a specific example will be given below by reference to the flow chart of FIG. **5**. At stage **501** of the process **500**, the kiosk receives user data, such as pursuant to the swipe of a user magnetic stripe card in a card reader. At stage **503**, the kiosk presents to the user a menu of options. In an embodiment of the invention, the options include an option to retrieve prior readings and an option to perform a current reading. If the user does not have a card or swipes a card for which no data is available, or if the user information associated with the card does not match the user identity derived from identity verification, e.g., via face recognition, the kiosk may so inform the user. For example, the visual user interface of the kiosk may display a message such as: "Customized services are not available due to lack of identity information/verification. Please visit [www.abc.com\ the information desk\etc.] to [obtain a Heath Information Card\confirm identity\etc.]."

[0054] At stage **505**, it is determined whether the user wishes to retrieve prior readings or perform a current reading. If the user desires to retrieve prior readings the process flows to stage **507***a*, whereat the kiosk contacts a server over a network or other link to retrieve the requested readings. During this time, at stage **507***b*, the kiosk may display an audio/video advertisement to the user. After the advertisement has played, the kiosk presents the requested readings to the user at stage **509** and returns to stage **503**.

[0055] If at stage **505** it is determined that the user wishes to perform a current reading, the process flows to stage **511**, whereat the user is instructed to prepare for the test, i.e., by placing their arm in the cuff, sitting appropriately on the scale/seat, gripping a handle in a specific location etc. At stage **513***a*, the test begins. Concurrently in stage **513***b*, the kiosk presents an audio/video advertisement to the user. After the advertisement has played, the kiosk presents the requested readings to the user at stage **509**.

[0056] A stage **515**, the kiosk determines whether the biometric reading given to the user in stage **509** indicates a physical condition that requires immediate attention. For example, as noted above, certain blood pressure readings or pulse rate readings may signal an ongoing or imminent serious physical problem such as a stroke. If it is determined at stage **515** that the biometric reading given to the user does not indicate a physical condition that requires immediate atten-

tion, then the process returns to stage **503**. Otherwise, the process flows to stage **517**, whereupon the kiosk connects the user to a responder, such as a call center representative or emergency personnel or doctor on call, and transmits data regarding the reading of concern to the responder. At this point, the responder is able to counsel the user or to summon the necessary aid.

[0057] As noted above, the non-biometric kiosk **400** as illustrated in FIG. **4** is usable to provide entertainment and advertising to users. The manner of operation according to a specific example is now shown by reference to the flow chart of FIG. **6**. At stage **601** of the process **600**, the process displays advertisements on a user interface. Such advertisements may be still or video, and may be interspersed with directions for a user to swipe their card to access entertainment options. At stage **603**, the kiosk receives user data, such as pursuant to the swipe of a user magnetic stripe card in a card reader. The data may either be stored on the card or the data stored on the card may be linked to the user data by the kiosk.

[0058] Upon receipt of the user data, the process flows to stage **605**, whereupon a list of selectable options is presented to the user. Such options may include sports scores, sports highlights, interviews, news, current affairs, exercise tips, etc. At stage **607**, the process receives a user selection of an option and at stage **609** proceeds to display the entertainment requested by the user. At the same time, the process may intersperse within the material advertisements customized to the user based on the user demographic or other data as gathered from the user's co-branded card.

[0059] Prior to ending, the process optionally prints a coupon for the user at stage **611**. The coupon may be specific to a store within which the kiosk is hosted, or may be specific to a product sold in such store, or may simply be specific to the user demographics. Subsequent to stage **611**, the process terminates.

[0060] Although the biometric service-providing kiosks discussed above may provide the measurement data as well as advertising and the other types of data discussed above, the kiosk also optionally provides customized user feedback in a further embodiment of the invention. For example, if the user has lost a certain amount of excess weight compared to a prior visit or visits, the kiosk will inform the user of the loss and will also provide a modified diet or exercise regimen to the user. The updated diet and/or regimen may be tailored to continue an appropriate weight loss, slow an excessive weight loss rate, or accelerate an inadequate weight loss rate.

[0061] To provide or reiterate certain salient features, it is noted that the health measurement kiosk may measure one or more resting health parameters include blood pressure, blood oxygen, cardiac condition, cardiac arrhythmia, blood glucose and body mass index (BMI). With respect to BMI or other weight-based measurements, the kiosk may include a scale configured to determine a user's weight.

[0062] With respect to verifying the identity of the user, the kiosk may include one or more identity functions or modules, such as a retinal scanner, a facial recognition module, a palm print reader, a foot print scanner and a finger print reader. In an embodiment having a scale for user weight, the ID module may be a foot print reader in the surface of the scale, for example. Further with respect to measuring BMI, the device (or its processor) may be configured to offer a reward to an obese user who meets a predetermined BMI threshold, e.g., over 30, and who has exhibited weight loss progress. The he reward may include reimbursable counseling, discounts on health insurance, and/or a cash reward.

[0063] The kiosk may store user health information locally or remotely, in an encrypted form available only to the user and third parties designated by the user, e.g., a physician. As noted above, linking of the user's mobile communication device to the remote health service or health care provider employs near field communications between the kiosk and the mobile device. An application may be loaded on the communication device to link the mobile communication device of the user to the remote health service or health care provider via streaming video or digital messaging. The application may access user payment information to allow payment from the user to the remote health service or health care provider. In an embodiment, the application is configured to display advertising on the device.

[0064] The remote health service or health care provider may be a call center or a health care practitioner. Further, the kiosk may include a user interface screen, such that the communication session between the user and the remote health service or health care provider is opened by first presenting on the user interface screen a selectable element for opening such a link, and receiving a user selection of the selectable element. The selectable element may be presented, for example, when the measured health parameters indicate a potential health problem. The remote health service or health care provider may be compensated by the user or the user's insurance. In an embodiment, the remote health service or health care provider refers the user to a physician for follow up care, and may collect a referral fee based on such referral.

[0065] The communication session between the user and the remote health service or health care provider may be one of voice over IP and a video conference. Further, the kiosk may display an advertisement to the user via the user interface screen or via a user device. The advertisement may include three or more types of stimulus selected from the among the available senses, e.g., visual stimulus, motion stimulus, audio stimulus, and scent stimulus.

1. A network system for providing health care information to a user, the network system comprising: (a) a first data server; and (b) a biometric measurement kiosk comprising, in a single unit, a seat to receive the user, a first platform coupled to the seat to receive a user limb for biometric measurement, and a second platform coupled to the first platform, the second platform having a platform wall and a graphical user interface associated therewith, the biometric measurement kiosk further comprising: (1) a first measurement tool that takes a measurement of a biometric parameter of a user; (2) a second measurement tool that gathers biometric user-identifying information; (3) a network connection to convey communications between the biometric measurement kiosk and the first data server; (4) a kiosk processor in the biometric measurement kiosk that sends the biometric parameter measurement and the user-identifying information to the first data server; and (5) a wireless communication module on the kiosk providing a bidirectional link to a cellular device carried by the user that, when active, provides communication between the kiosk and the user, wherein the wireless communication module on the kiosk calls the user's cell phone automatically, wherein the bidirectional link, once established by the wireless communication module to the user cellular device, is routed through the kiosk to a remote human recipient whereby the user and the remote recipient are placed into a call with each other through the kiosk, wherein the wireless

communication module on the kiosk is triggered by a detection of a potentially dangerous state associated with the user based on the biometric parameter measurement and the user-identifying information.

2. The network system according to claim **1**, further wherein the wireless communication module on the kiosk is further configured to be triggered by user action.

3. The network system according to claim **1**, wherein the potentially dangerous state includes a blood pressure reading that indicates that the user is having, or is in danger of having, a stroke.

4. The network system according to claim **1**, wherein the bidirectional link connects only to devices within the near field.

5. A network system for providing health care information to a user, the network system comprising: (a) a first data server; and (b) a biometric measurement kiosk comprising, in a single unit, a seat to receive the user, a first platform coupled to the seat to receive a user limb for biometric measurement, and a second platform coupled to the first platform, the second platform having a platform wall and a graphical user interface associated therewith, the biometric measurement kiosk further comprising: (1) a first measurement tool that takes a measurement of a biometric parameter of a user; (2) a second measurement tool that detects biometric user-identifying information; (3) a network connection to convey communications between the biometric measurement kiosk and the first data server; (4) a kiosk processor that sends the biometric parameter measurement and the biometric user-identifying information to the first data server; and (5) a wireless communication module on the kiosk providing a bidirectional link to a wireless device carried by the user, wherein the bidirectional link is triggered based on the user-identifying information.

6. The network system according to claim **5**, wherein the wireless communication module on the kiosk is further configured to be triggered by user action.

7. The network system according to claim **5**, wherein the wireless device is one of a cellular phone and an arm-worn device.

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外部链接	Espacenet USPTO		

摘要(译)

本发明的实施例涉及为隐私，奖励或激励的目的提供经认证的健康信息。在本发明的一个实施例中，与通信基础设施耦合的生物统计测量设备实现安全信息交换和增强数据安全性的系统。在本发明的一个实施例中，构建安全/验证系统以提供用户身份的验证。