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(54) **WIRELESS SENSOR AND SENSOR
INITIALIZATION DEVICE AND METHOD**

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600/546; 600/529**

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(57) **ABSTRACT**

A sensor initialization device includes a panel with respective indicia for each of plural wireless sensor functions. For each sensor function indicia, there is a respective initialization circuit coupled to the sensor function indicia for electronic communication through the panel to a wireless sensor unit upon selection of the sensor function. The sensor functions can include body temperature, heart rate, blood pressure, respiratory, electrocardiogram, electroencephalogram, electromyography, electrooculogram, and polysomnography.

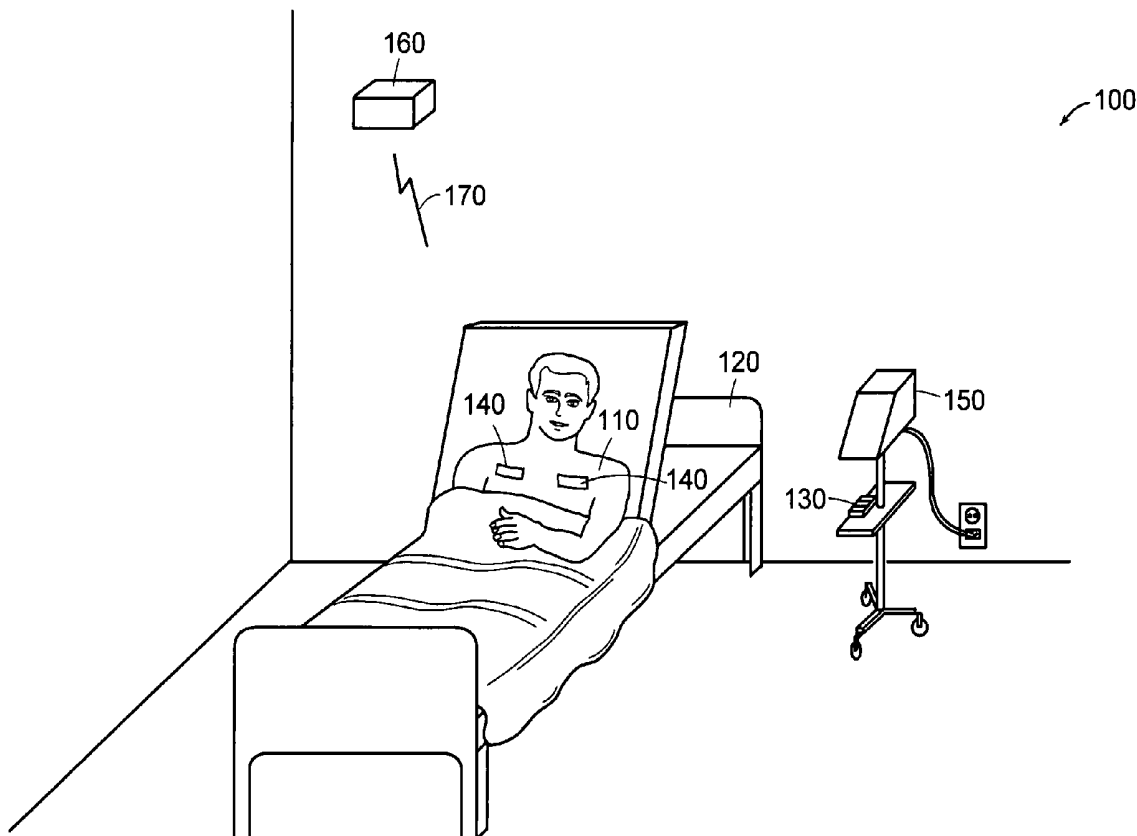
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The panel also has respective indicia for each of plural body placement locations. A respective initialization circuit coupled to the body placement location indicia is electronically communicated through the panel to the wireless sensor unit upon selection of the body placement location indicia.

Publication Classification

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A61B 5/04; A61B 5/08**



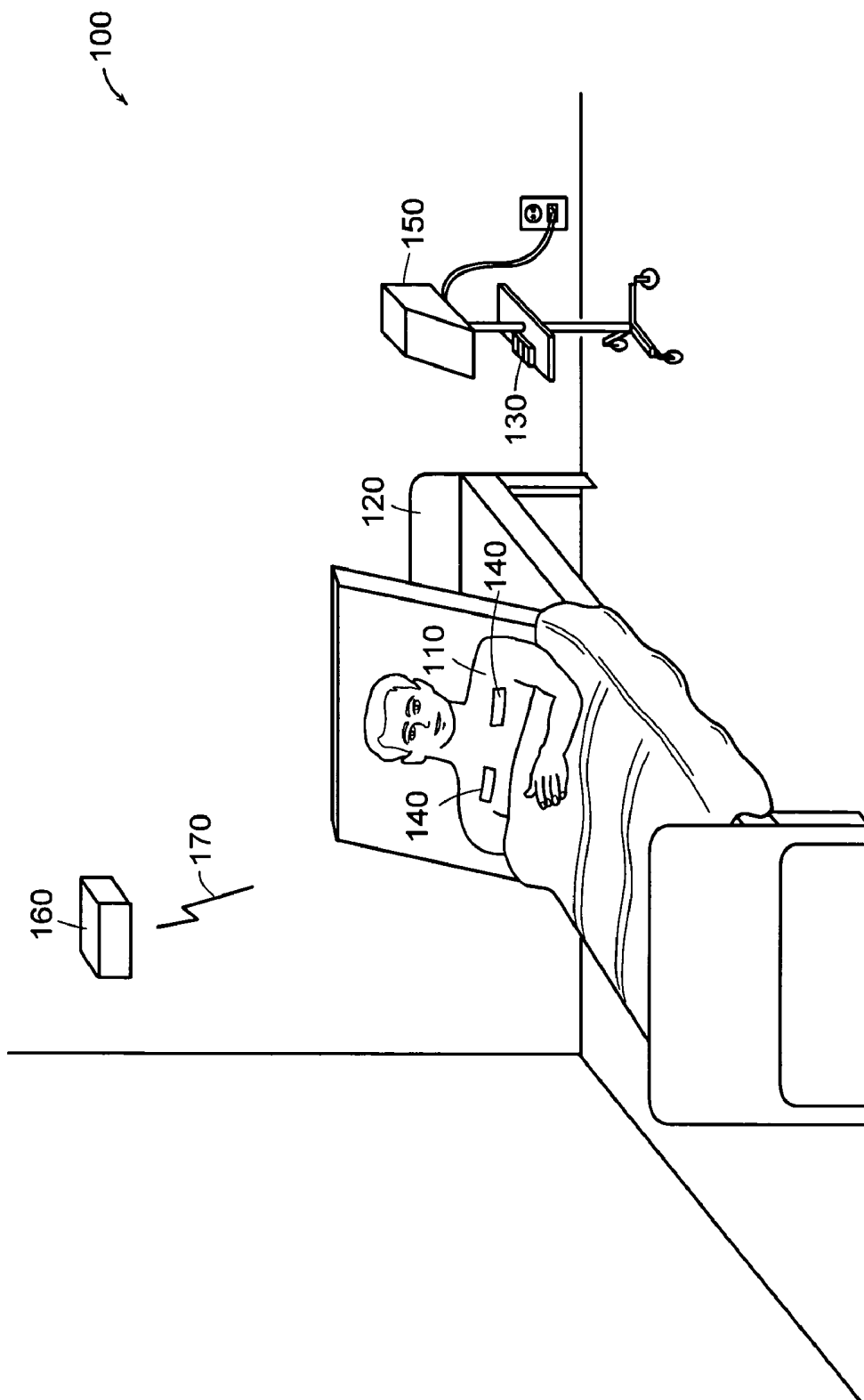


FIG. 1

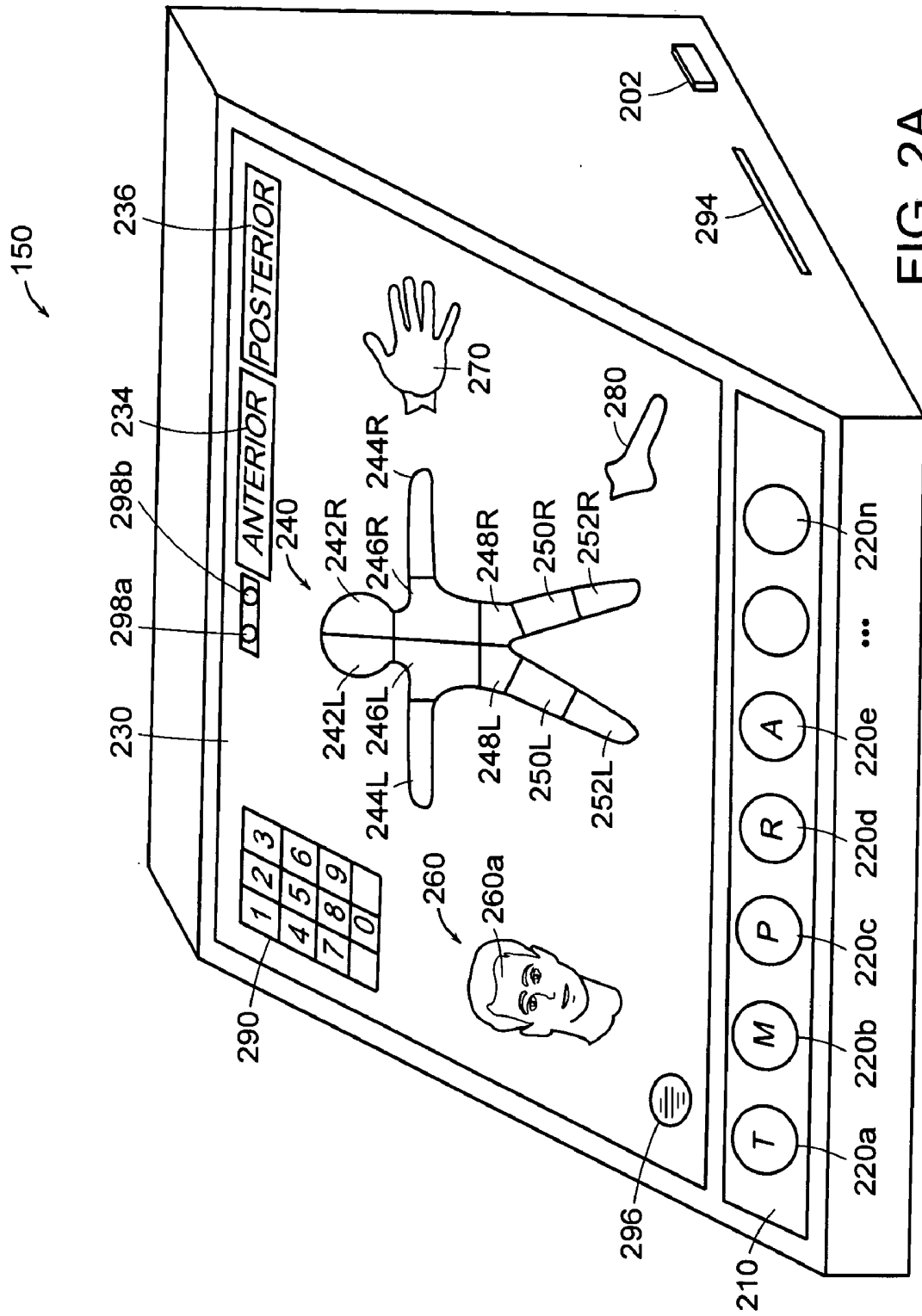


FIG. 2A

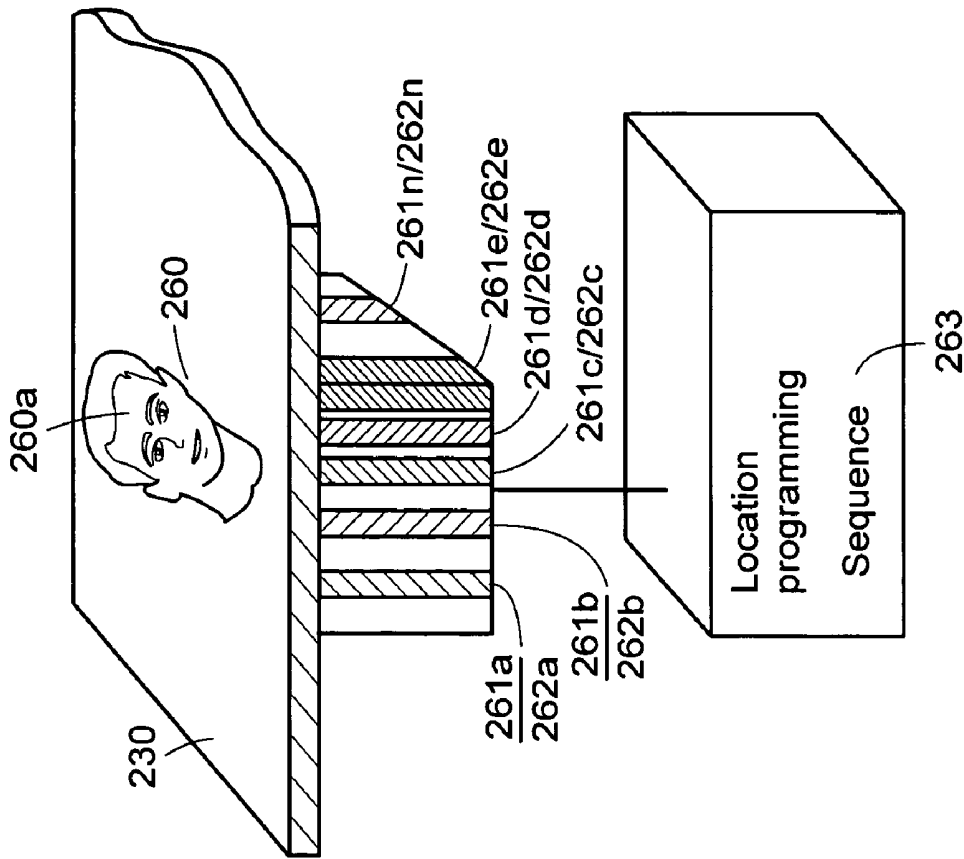


FIG. 2C

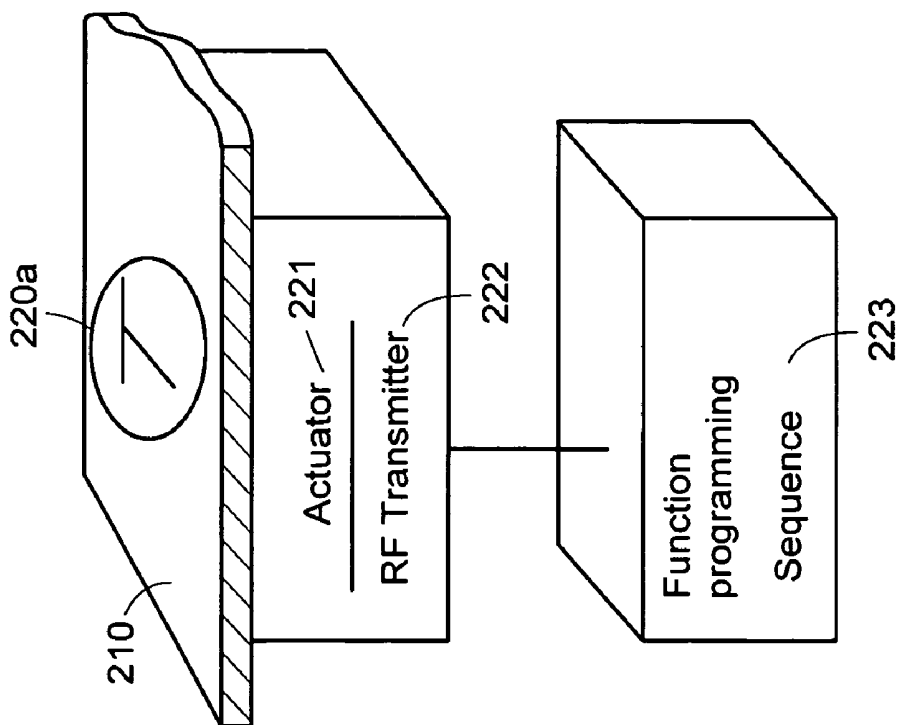


FIG. 2B

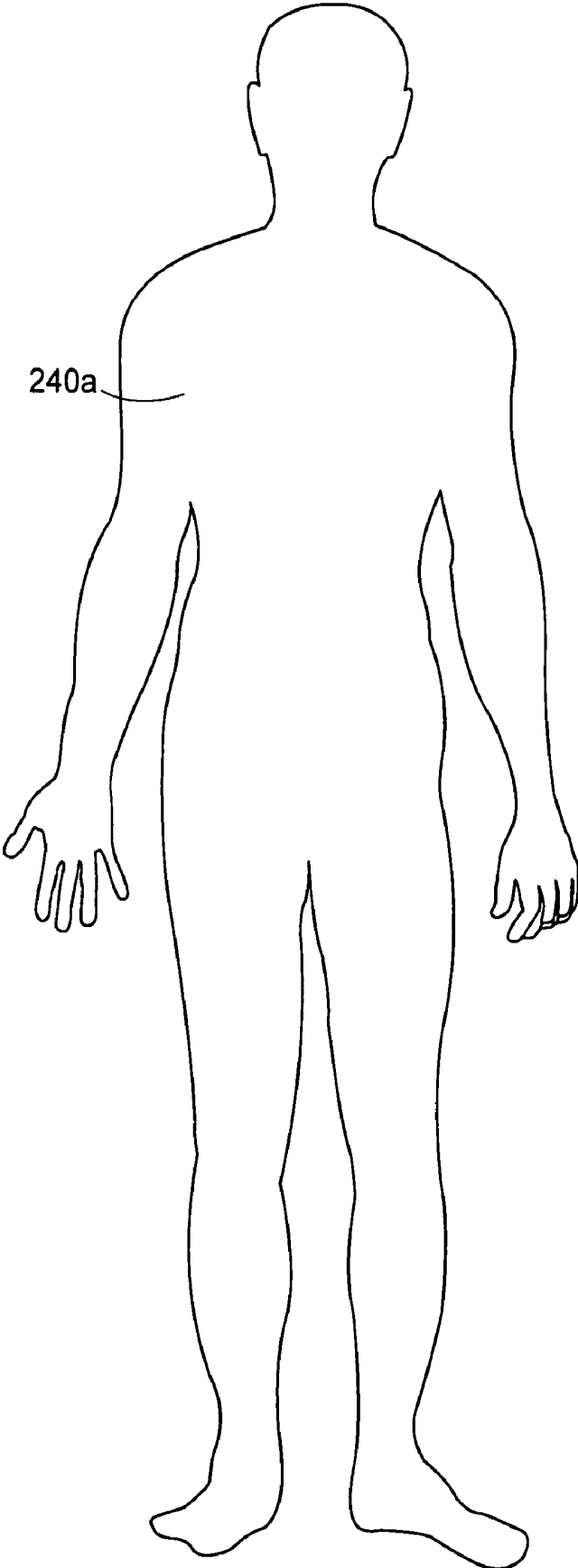


FIG. 3A

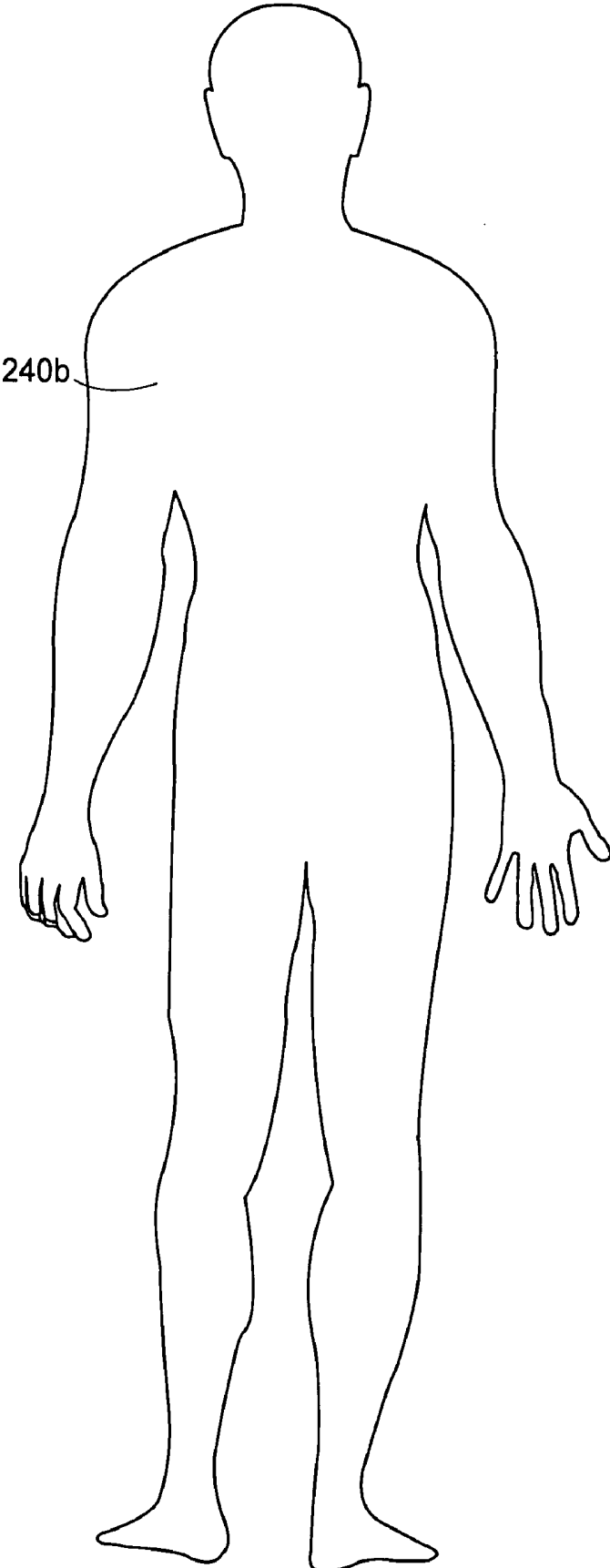


FIG. 3B

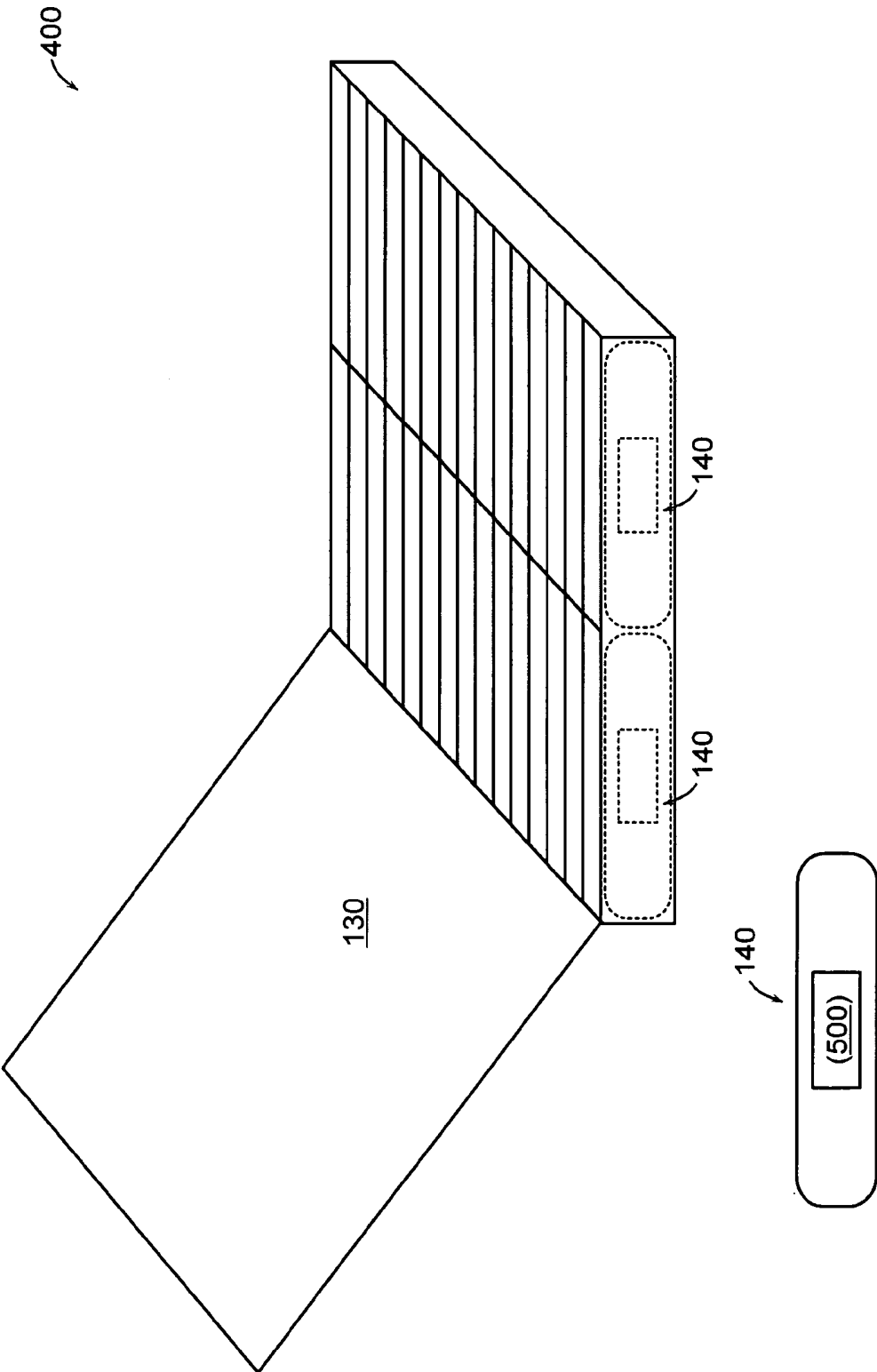


FIG. 4

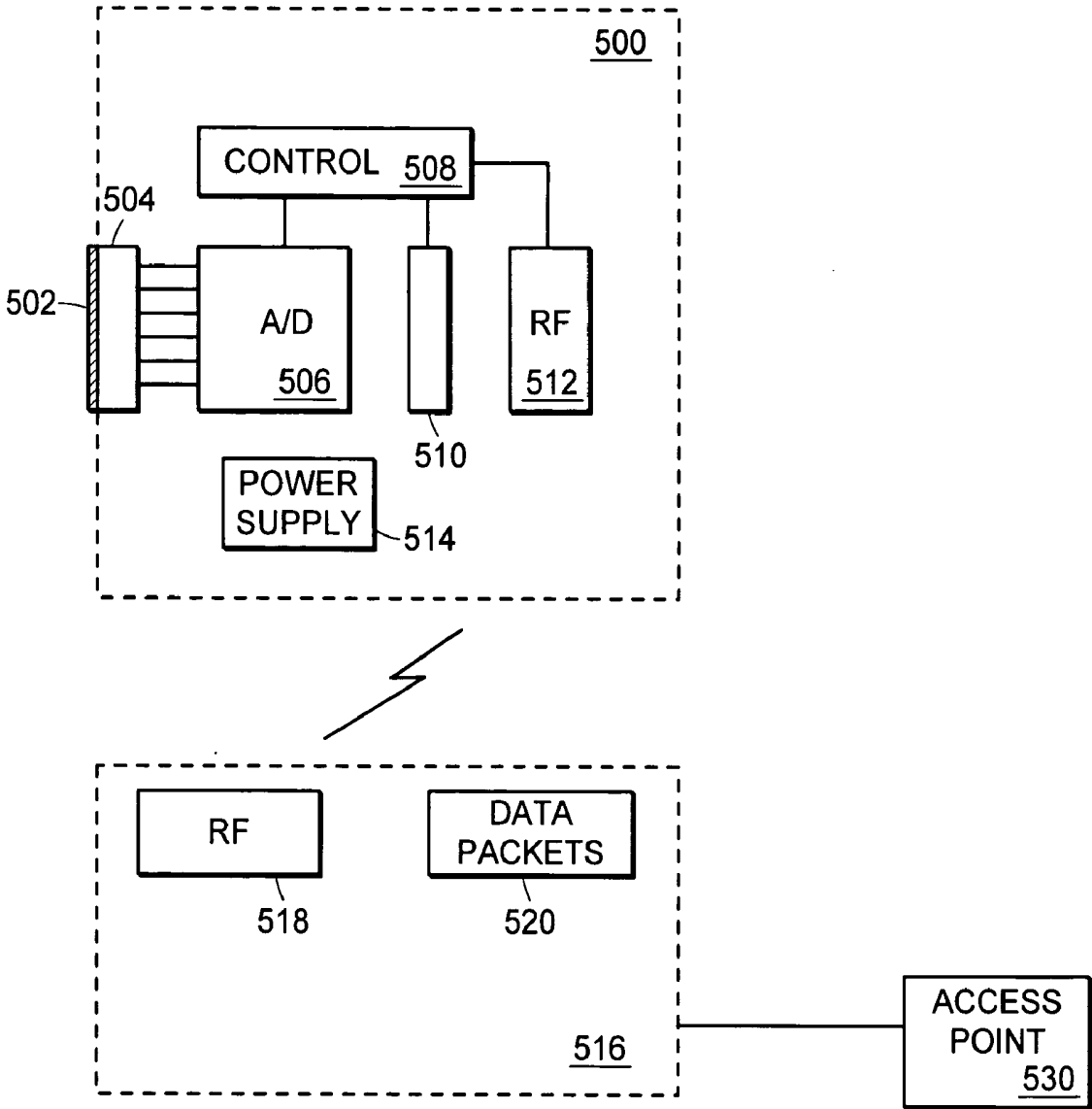


FIG. 5

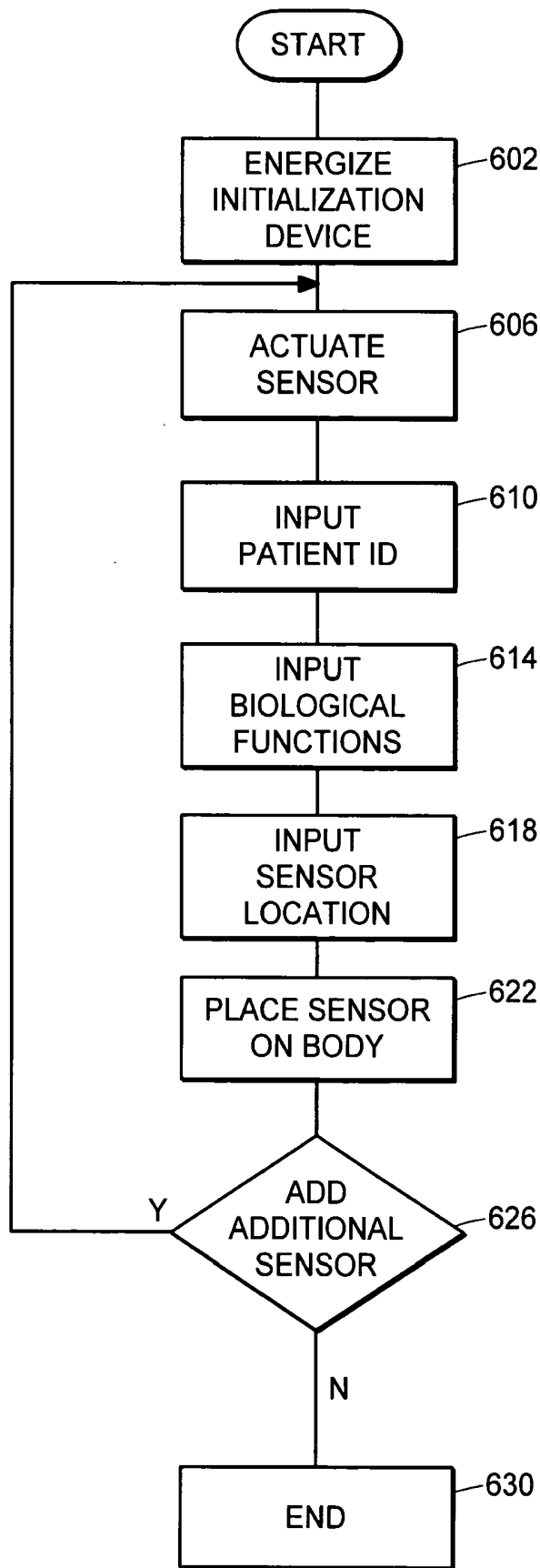


FIG. 6

WIRELESS SENSOR AND SENSOR INITIALIZATION DEVICE AND METHOD

BACKGROUND OF THE INVENTION

[0001] Wireless medical monitoring systems have been proposed in the prior art. One such system can include a sensor, controller, and transceiver electronics all contained within a wireless sensor patch. The wireless sensor patch monitors a predetermined function and transmits data to a receiver. The receiver sends the data to a computer or monitor for viewing.

[0002] The sensor within a wireless sensor patch can be either a temperature sensor, a heart rate sensor, a blood pressure sensor, a respiratory sensor, an electrocardiogram sensor, an electroencephalogram sensor, an electromyography sensor, an electrooculogram sensor, or a polysomnography sensor. Thus each wireless sensor patch is only able to monitor a single function as defined by its sensor which is designed at the factory (i.e., a factory set function).

SUMMARY OF THE INVENTION

[0003] There is a need for a generic (multifunctional) wireless sensor which can be user programmable for a plurality of biological/physiological properties. In such a case, each sensor would have a unique identifier associated with a specific patient such that a receiving unit is able to determine which sensor is associated with which patient.

[0004] The present invention provides a sensor initialization device for such generic (multifunctional) wireless sensors and/or other sensors. The present invention includes (i) a panel with respective indicia for each of plural wireless sensor functions, such that there are a plurality of sensor function indicia, and (ii) for each sensor function indicia, a respective initialization circuit coupled thereto. Each initialization circuit is coupled to the corresponding sensor function indicia for electronic communication through the panel to a wireless sensor unit upon selection of the sensor function. The sensor functions can include body temperature, heart rate, audio (for auscultation, lung sounds, patient vocalizations, etc.), blood pressure, respiratory, electrocardiogram, electroencephalogram, electromyography, electrooculogram, and polysomnography.

[0005] There is also provided by the present invention a generic biosensor having (i) a plurality of configurable sensors for sensing biological/physiological functions, (ii) a control unit for programming the biosensor to sense at least one biological/physiological function, and (iii) a transceiver for transmitting the at least one sensed biological/physiological function to a base unit and for receiving programming information from an initialization unit.

[0006] A method is provided for initializing a generic biosensor and includes activating the biosensor, programming the biosensor with patient identification information, determining at least one biological/physiological function to be sensed, programming the biosensor for the determined biological/physiological function using an indicia representing the determined biological/physiological function, determining a body location where the biological/physiological sensor is to be placed on the body, and programming the biosensor for the determined body location using an indicia representing the determined body location.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] The foregoing and other objects, features and advantages of the invention will be apparent from the following more particular description of preferred embodiments of the invention, as illustrated in the accompanying drawings in which like reference characters refer to the same parts throughout the different views. The drawings are not necessarily to scale, emphasis instead being placed upon illustrating the principles of the invention.

[0008] FIG. 1 is a perspective view of a patient's room using the sensor system of the present invention.

[0009] FIG. 2A is a perspective view of a sensor initialization device of the present invention.

[0010] FIG. 2B is a circuit diagram for a sensor type programmer of the device of FIG. 2A.

[0011] FIG. 2C is a circuit diagram for a sensor body location programmer of the device of FIG. 2A.

[0012] FIG. 3A shows an anterior outline of a human body as may be displayed on the panel of the embodiment of FIG. 2A.

[0013] FIG. 3B shows a posterior outline of the human body as may be displayed on the panel of the embodiment of FIG. 2A.

[0014] FIG. 4 shows a sensor and a kit of sensors employed in one embodiment of the present invention.

[0015] FIG. 5 is a circuit diagram of the sensor of FIG. 4.

[0016] FIG. 6 is a flow diagram for initializing sensors of FIG. 4 using the initialization device of FIG. 2.

DETAILED DESCRIPTION OF THE INVENTION

[0017] A description of preferred embodiments of the invention follows.

[0018] The present invention addresses the need for multi-purpose wireless sensors that are generic across multiple functions (not factory set function wise) which can be programmed or otherwise initialized and activated at the point of use to a specific desired function(s). The same stock or inventory of multi-purpose wireless sensors thus allows monitoring of a plurality of biological/physiological properties. As mentioned above, the present invention accomplishes this by providing a sensor initialization device, a generic biosensor, and a method of initializing generic sensors. With regard to the sensor initialization device, a panel provides a plurality of sensor function indicia and corresponding initialization circuits for electronic communication through the panel. Further, the panel may have respective indicia for each of plural body placement locations, such that there are a plurality of body placement location indicia. For each body placement location indicia, there is a respective initialization circuit coupled to the body placement location indicia. Upon user selection of a body placement location indicia, the corresponding initialization circuit is electronically communicated through the panel to the wireless sensor unit. The body placement location indicia include at least one of a pictorial image of body parts and a pictorial outline of a human or other body with plural user selectable portions. The pictorial outline of the human or

other body parts can be segmented into quadrants defining specific regions of the subject body and can include a detailed anterior and posterior outline of the human or other body. The sensor initialization device can also have anterior indicia and posterior indicia for selecting between a side of the human or other body.

[0019] The device can include patient identification indicia for programming the sensor with patient identification information. The patient identification indicia can be numerical indicia.

[0020] With respect to the invention generic biosensor, each configurable sensor can serve as a temperature sensor, a heart rate sensor, a blood pressure sensor, a respiratory sensor, an electrocardiogram sensor, an electroencephalogram sensor, an electromyography sensor, an electrooculogram sensor, and a polysomnography sensor.

[0021] The biosensor can further include unique sensor identification information. The sensor identification information can be a sensor serial number.

[0022] The control unit programs the biosensor with patient identification information. The patient identification information can be a patient's social security number, hospital identification number, or any other information which uniquely identifies the patient.

[0023] With respect to the invention method of initializing generic sensors, such as biosensors, programming the biosensor with patient identification information includes depressing the biosensor on patient identification indicia representing the patient identification information. The patient identification indicia are any combination of alphabetical, numeral, and other indicia.

[0024] Programming the biosensor for the determined biological/physiological function includes depressing the biosensor on biological/physiological function indicia representing the determined biological/physiological function. The biological/physiological function include body temperature, heart rate, blood pressure, respiratory, electrocardiogram, electroencephalogram, electromyography, electrooculogram, and polysomnography.

[0025] Programming the biosensor for the determined body location includes depressing the sensor on body location indicia representing the determined body location. Depressing the biosensor on a body location indicia further includes depressing the biosensor on multiple body location indicia until the biosensor is fully programmed with the determined body location. The body location indicia include at least one of a pictorial image of body parts and a pictorial outline of a human or other body with plural user selectable portions. The pictorial outline of the human or other body parts can be segmented into quadrants defining specific regions of the subject body and can include a detailed anterior outline of the human or other body and a detailed posterior outline of the human or other body.

[0026] Referring now to the Figs., FIG. 1 shows a sensor system 100 according to the principals of the present invention in use on a patient 110 in a hospital bed 120. In general, a care provider, obtains a generic wireless sensor 140 from a supply (box) 130 of sensors. At this stage the sensor 140 has the ability to monitor any number and variety of functions (biological/physiological properties) and is not a spe-

cific/single function sensor as in the prior art. After deciding how he wants to use the sensor 140, the care provider uses initialization unit 150 and initializes the generic wireless sensor 140 for a specific biological/physiological property to be sensed. The care provider then places the initialized sensor 140 on the patient's body 110. The sensor 140 wirelessly transmits data 170 to a base unit 160 which collects information related to the biological/physiological property being sensed. The base unit 160 can be remotely accessed to retrieve the sensed information or the base unit can automatically forward the sensed information to a host computer (not shown). More than one sensor may be used depending upon the physiological property to be sensed.

[0027] FIG. 2A shows a perspective view of the initialization unit 150. The initialization unit 150 includes a sensor function panel 210, a body location panel 230, and a power switch 202. The sensor function panel 210 includes a plurality of sensor function indicia 220a . . . 220n. Each indicia 220a . . . 220n represents a different type of sensor function. For example, the illustrated indicia "T", "M", "P", "R", and "A" represent temperature, motion, pulse (heart rate), respiration, and audio respectively. Although "T", "M", "P", "R", and "A" are shown on the panel 210 of the FIG. 2 embodiment, numerous other types of biological/physiological functions are suitable, such as blood pressure, electrocardiogram, electroencephalogram, electromyography, electrooculogram, and polysomnography. It should be understood that the principals of the present invention apply to any type of biological and physiological functions associated with the human or other body. Behind each sensor function indicia 220a . . . 220n is an associated respective initialization circuit which electronically communicates the sensor function to a wireless sensor 140 (FIG. 1) through the sensor function panel 210.

[0028] FIG. 2B shows a sample of an initialization circuit for temperature sensory function corresponding to indicia "T"220a on sensor function panel 210. An actuator 221 and RF transmitter 222 are located under the panel 210 and in close proximity to indicia "T"220a. The actuator 221 and RF transmitter 222 are in electrical or optical communication with the sensor function programming sequence 223 associated with indicia "T"220a. In response to caregiver selection of indicia "T"220a (e.g. touching of subject sensor 140 to indicia "T"), actuator 221 enables RF transmitter 222 to transmit programming sequence 223 through panel 210 to the wireless sensor 140. Upon receipt of this transmission, wireless sensor 140 processes the received programming sequence 223 which results in initialization (enabling, etc.) of the sensor 140 according to the corresponding function (temperature sensing in this example) of user selected indicia "T"220a.

[0029] Actuator 221 may be pressure induced, heat activated, light sensitive, or of other activation technology. The caregiver may press sensor 140 against indicia of panel 210 to generate corresponding actuators 221, or may otherwise depress desired function panel indicia (to operate corresponding actuators 221) and then hold sensor 140 poised over (near) the indicia for generation of the initialization circuit.

[0030] The activation and programming sequence for the sensor function may be, for example in the simple case of applying a thermometer to a patient's forehead. After an

initial sequence to input patient ID, the caregiver simply depresses indicia **220a**, then **260a** before applying to the patient. A more complex sensor application may be required to enable more than one function in the sensor such as may be done to monitor respiration as well as lung sounds by depressing “R”**220d**, then “A”**220e** in sequence.

[0031] The body placement panel **230** includes a plurality of body placement indicia representing a different location on the human body. These indicia include but are not limited to a human body outline **240**, a head **260**, a hand **270**, and a foot **280**. The outline of the human body **240** can be divided into quadrants representing different areas and locations of the human body for a more precise measurement. For example, the body is divided into left and right regions represented by L and R respectively including head region **242**, arm regions **244**, upper torso region **246**, lower torso region **248**, upper leg regions **250**, and lower leg regions **252**. Although 12 quadrants are shown, it should be understood that the quadrant regions can vary depending upon the precision to be obtained. The body placement panel **230** also includes indicia for enabling user selection or specification of the anterior (front) **234** and posterior (back) **236** regions of the body. Upon such user selection, the body outline **240** may be replaced by a detailed representation of the human body's anterior and posterior regions **240a**, **240b** as shown in **FIGS. 3A and 3B**. Behind each of the body placement indicia **240**, **260**, **270**, and **280** is an associated respective initialization circuit which electronically communicates the body placement location to a wireless sensor **140** (**FIG. 1**) through the body placement panel **230**.

[0032] **FIG. 2C** is an example initialization circuit for body placement of the forehead **260a** for use with the temperature sensing function example of **FIG. 2B**. A plurality of actuators **261a . . . 261n** and RF transmitters **262a . . . 262n** are precisely located under and in close proximity with head indicia **260** representing the precise location the sensor **140** is to be placed on the patient's body, for example the forehead **260a** for sensing temperature. The actuators **261a . . . 261n** and RF transmitters **262a . . . 262n** are in electrical or optical communication with the body location programming sequence **263** associated with head indicia **260**. In response to caregiver selection of (e.g. holding sensor **140** against) the forehead area **260a** of head indicia **260** on body placement panel **230**, corresponding actuator **261** enables its RF transmitter **262** to transmit pertinent location programming sequence **263**. RF transmitter **262** transmits the forehead location programming sequence **263** (in this example) through panel **230** to the subject wireless sensor **140**. In response to this transmission, wireless sensor **140** (as previously programmed to sense temperature in **FIG. 2B**) processes the received forehead location programming sequence **263** which results in initialization (calibration, parameter setting, etc.) of now temperature sensor **140** for use on the patient's forehead. This is in accordance with the sequence of caregiver selections from sensor function panel **210** and body placement panel **230**.

[0033] Actuators **261** may be pressure induced, heat activated, light sensitive, or of other activation technology. Like in **FIG. 2B**, the caregiver may press sensor **140** against the indicia of body placement panel **230** to generate corresponding actuators **261**, or may otherwise operate actuators **261** of desired body placement indicia and then hold sensor **140**

near or adjacent to the indicia for operation of the corresponding initialization circuit.

[0034] The activation and programming sequence for the body placement location may be, for example the case of placing the sensor on the chest of a patient to monitor respiration. In this case, “R”**220d** (on sensor function panel **210**) is depressed by the caregiver, before both **246L** and **246R** on body placement panel **230** are depressed by the caregiver. Depressing “R”**220d** may activate in this case the sensor's strain gauge function, and the two location indicia **246L**, **246R** would indicate that the sensor is to be programmed for use/placement across the chest of the patient. In another example, a patient with a badly sprained right leg may be monitored for motion by the caregiver pressing sensor **140** on function indicia “M”**220b** and then subsequently depressing Anterior indicia **234** and holding sensor **140** against upper left leg indicia **250L** on body placement panel **230**. This sequence programs the sensor **140** to monitor right leg motion for a patient who may be undergoing therapy, for example.

[0035] Numerical indicia **290** may also be included to program the sensor with patient information. The patient identification information can be a patient's social security number, hospital identification number, or any other unique numerical value. Behind each of numerical indicia **290** is an associated initialization circuit which electronically communicates the numerical number associated with the indicia to the wireless sensor **140** (**FIG. 1**) through the initialization unit **150**.

[0036] Optional programming display lights **298a**, **298b** and a speaker **296** may be used either separately or collectively to aid the user in initializing or otherwise programming the wireless sensor **140** (**FIG. 1**). Further, an optional slot **294** may be provided for programming the wireless sensor **140** (**FIG. 1**) where the initialization circuitry is located within the slot for communicating to the sensor **140** information represented by indicia as selected by the user/care provider. Slot **294** may be used as an alternative to or in combination with the present holding of sensor **140** against panels **210**, **230** described above.

[0037] **FIG. 4** shows a perspective view of a box **130** or kit **400** of generic wireless sensors **140**. The sensor **140** has an adhesive backing strip or substrate (similar to that of a band-aid) and houses electronics **500** as shown in detail in **FIG. 5**. The electronics **500** include a power supply **514**, a plurality of body contacts **502** for interfacing with the subject patient. Signals generated by the body contacts **502** are transmitted through a plurality of transducer elements **504** to an analog-to-digital (A/D) converter **506**. The digitized output from A/D converter **506** is input to a programmable control unit **508** which is controlled by control logic **510**. A radio frequency (RF) transceiver **512**, transmits sensor output data to a base unit **160** (**FIG. 1**). The programmable control unit **508** is initialized (i.e., programmed) by sensor initialization device unit **150** (**FIG. 2**) to perform the user selected functions (e.g. sense temperature of the head, sense blood pressure from the hand, sense pulse or heart rate from the client area, etc.) as communicated: (a) from the user through the sensor function panel **210** and the body placement panel **230** (discussed above); and (b) from the initialization device **150** to the sensor electronics **500** via RF transceiver **512**. That is, at the factory, the programmable

control unit **508** is printed with all circuits for monitoring the full range of available functions (biological/physiological properties). At the time of use, through invention initialization unit **150**, the programmable control unit **508** circuits corresponding to user selected/specified function(s) are initialized. After initialization/activation, the sensor electronics **500** serve the user selected functions only.

[0038] The control logic **510** supports operation of programmable control unit **508** and controls the flow of sensor data to and from the RF transceiver **512**. Techniques common in the art for controlling data flow are employed.

[0039] Continuing with the lower portion of FIG. 5, the base unit **160** (FIG. 1) has similar electronics **516** for collecting and aggregating information (data) received from the wireless sensors **140** and sending the data to an access point **530**. The base unit electronics **516** include an RF transceiver **518** and a data packetizer **520**. The collecting and aggregating of data can be sent to the access point **530** over a 802.11 or similar type protocol. Access point **530** may be a server in a network, a host computer, and the like, local and/or remote the patient location.

[0040] For example, a care giver can monitor, from a remote location, the sensed function for a given body placement location. Further, the care giver can remotely change the sensed function for the given body placement location by knowing the patient identification information and the body placement location. The caregiver communicates desired change in sensor function by transmitting a corresponding program sequence (similar to program sequences **223**, **263** of FIGS. 2B and 2C) from the remote location to access point **530**. In turn, access point **530** transmits the subject program sequence(s) to the base unit **160**. In response to program sequences received at the base unit **160**, RF transceiver **518** transmits the program sequences to sensor **140**'s RF transceiver **512**. RF transceiver **512** processes the received program sequences similar to original initialization previously described. This results in changed or added sensor function of sensor **140** (and operates at the previously programmed body placement on the patient).

[0041] FIG. 6 is a flow diagram of sensor **140** initialization. The initialization of a wireless sensor **140** will be described using the flow diagram of FIG. 6 in conjunction with reference to FIGS. 1-5.

[0042] The initialization method starts with Step **602**. In Step **602**, the initialization unit **150** is energized (powered on). A care giver can simply energize the initialization panel by using power switch **202**.

[0043] In Step **606**, a wireless sensor **140** is activated. In one embodiment, the wireless sensor **140** is activated by removal of a non-conductive strip located between the power supply **514** and the power supply connector (to electronics **500**).

[0044] In Step **610**, patient identification information is input into activated sensor **140**. The wireless sensor **140** is placed over and depressed on a numerical indicia **290** representing the first numeral of the patient's identification information. This step is repeated until the remaining numerals of the patient's identification information are programmed into the sensor **140**. At each repetition an optional light **298** or audible signal (through speaker **296**) can give an

indication if the sensor **140** was programmed with or without error. Specifically, with each pressing of the sensor **140** against panel **230** indicia. Corresponding circuits coupled to the panel indicia transmit data signals to the sensor transceiver **512**. Sensor control logic **510** and programmable control unit **508** coupled to transceiver **512** receive the data and store the patient's identification information. The patient identification information can be a patient's social security number, hospital identification number, or any other unique numerical value.

[0045] In Step **614**, the user selected biological/physiological function is input (communicated) to the sensor **140**. The wireless sensor **140** is placed over and depressed on biological/physiological function indicia **220a** . . . **220n** representing the user desired biological/physiological function to be sensed. Corresponding circuits coupled to panel **210** indicia transmit programming signals to the sensor transceiver **512**. Sensor control logic **510** and programmable control unit **508** receive the programming signals from transceiver **512**. In turn, the received programming signals initialize the sensor circuits that correspond to the user selected functions. An optional light **298** or audible signal (through speaker **296**) can give an indication if the sensor **140** was programmed with or without error.

[0046] In Step **618**, body placement information is input into the sensor **140**. The wireless sensor **140** is placed over and depressed on body placement indicia **234**, **236**, **240**, **260**, **270**, and **280** representing the area of the patient's body to be sensed. Corresponding panel **230** indicia circuits transmit data signals to the sensor transceiver **512**. Sensor control logic **510** and programmable control unit **508** receive the data signals from transceiver **512** and determine therefrom body location where the sensor is to be used. In turn, sensor circuits **500** may calibrate and set certain variables accordingly. An optional light **298** or audible signal (through speaker **296**) can give an indication if the sensor **140** was programmed with or without error. This step may be repeated until a precise location is programmed.

[0047] For example, a pulse located in the front of a patient's right foot is desired. The sensor **140** is placed and depressed on the following indicia in the following sequence: body function indicia "P" **220c**, anterior indicia **234**, lower right leg **252R**, and foot **280**. It should be understood that a variety of sequences can accomplish the same end result.

[0048] Continuing with FIG. 6, next (Step **622**) the sensor **140** is removably affixed to the patient's body **110**. A care giver places the sensor **140** on the patient's body **110** in the programmed location.

[0049] In Step **626**, additional sensors **140** may be initialized/programmed by the user. If the desired sensed function requires additional sensors, such as for an electrocardiogram, steps **606** through **622** are repeated with another wireless sensor **140** from box **130** or kit **400**.

[0050] The method ends at Step **630**.

[0051] While this invention has been particularly shown and described with references to preferred embodiments thereof, it will be understood by those skilled in the art that various changes in form and details may be made therein without departing from the scope of the invention encompassed by the appended claims.

[0052] For example, human animal, or other subjects may benefit from the wireless sensors and systems of the present invention. As such, panel 230 indicia may be outlines and regions appropriate to such use. The illustrations in FIG. 2 are by way of example for human patients and are not limitations of the present invention. The panels may be replaced by a graphical user interface (GUI) for use with slot 294. The GUI may include a pressure or light sensitive touch screen similar to a PDA screen.

[0053] Alphabetic, other characters, and symbols common in the industry of use (medical, veterinarian, etc.) may be used in panel indicia 290 instead of or in addition to numerals. The numeric illustration and discussion in FIGS. 2 and 6 above are for purposes of illustrating, and not limiting, the principals of the present invention.

[0054] The initialization device 150 panel may employ a "smart" panel used in conjunction with a patient/hospital data base system for downloading to the panel patient information, such as gender, age, height, weight, etc. A "smart" panel may also include a bar code reader which may allow the caregiver to scan the patient's hospital wrist band for direct input of patient information to the sensor 140 rather than through the keypad 290.

What is claimed is:

1. A sensor initialization device, comprising:
 - a panel having respective indicia for each of plural wireless sensor functions, such that there are a plurality of sensor function indicia; and
 - for each sensor function indicia, a respective initialization circuit coupled to the sensor function indicia for electronic communication through the panel to a wireless sensor unit upon selection of the sensor function.
2. The sensor initialization device of claim 1, wherein the sensor function include body temperature, heart rate, blood pressure, respiratory, audio, electrocardiogram, electroencephalogram, electromyography, electrooculogram, and polysomnography.
3. The sensor initialization device of claim 1, further including:
 - the panel having respective indicia for each of plural body placement locations, such that there are a plurality of body placement location indicia; and
 - for each body placement location indicia, a respective initialization circuit coupled to the body placement location indicia for electronic communication through the panel to the wireless sensor unit upon selection of the body placement location indicia.
4. The sensor initialization device of claim 3, wherein the body placement location indicia include at least one of a pictorial image of body parts and a pictorial outline of a body with plural user selectable portions.
5. The sensor initialization device of claim 3, wherein the pictorial outline of a body is segmented into quadrants defining specific regions of the body.
6. The sensor initialization device of claim 3, wherein the pictorial outline of a body includes a detailed anterior outline of the body and a detailed posterior outline of the body.
7. The sensor initialization device of claim 3, further including an anterior indicia and a posterior indicia for selecting between a side of a subject body.

8. The sensor initialization device of claim 3, further including patient identification indicia for programming the sensor with patient identification information.

9. The sensor initialization device of claim 8, wherein the patient identification indicia are numerical indicia.

10. A generic biosensor, comprising:

- a plurality of configurable sensors for sensing biological or physiological functions;

- a control unit for programming the plurality of sensors to sense at least one respective biological or physiological function; and

- a transceiver for transmitting the at least one sensed biological or physiological function to a base unit and for receiving programming information from an initialization unit.

11. The biosensor of claim 10, wherein the configurable sensors include a temperature sensor, a heart rate sensor, a blood pressure sensor, a respiratory sensor, an audio sensor, an electrocardiogram sensor, an electroencephalogram sensor, an electromyography sensor, an electrooculogram sensor, and a polysomnography sensor.

12. The biosensor of claim 10, further including unique sensor identification information.

13. The biosensor of claim 12, wherein the sensor identification information is a sensor serial number.

14. The biosensor of claim 10, wherein the control unit further programs the biosensor with patient identification information.

15. A method of initializing a generic biosensor; comprising:

- activating the biosensor;

- programming the biosensor with patient identification information;

- determining at least one biological or physiological function to be sensed;

- programming the biosensor for the determined biological or physiological function using an indicia representing the determined biological or physiological function;

- determining a body location where the programmed biosensor is to be placed on a subject; and

- programming the biosensor for the determined body location using an indicia representing the determined body location.

16. The method of claim 15, wherein the patient identification information includes a patient's social security number or a patient's hospital identification number.

17. The method of claim 15, wherein programming the biosensor with patient identification information includes depressing the biosensor on a panel bearing indicia representing the patient identification information.

18. The method of claim 17, wherein the indicia are numeral indicia.

19. The method of claim 15, wherein programming the biosensor for the determined biological or physiological function includes depressing the biosensor on a panel bearing biological or physiological function indicia representing the determined biological or physiological function.

20. The method of claim 19, wherein the biological or physiological function include body temperature, heart rate,

blood pressure, audio, respiratory, electrocardiogram, electroencephalogram, electromyography, electrooculogram, and polysomnography.

21. The method of claim 20, wherein programming the biosensor for the determined body location includes depressing the bio-sensor on a panel bearing body location indicia representing the determined body location.

22. The method of claim 21, wherein the step of depressing the biosensor on a panel further includes depressing the biosensor on multiple body location indicia on the panel until the biosensor is fully programmed with the determined body location.

23. The method claim 21, wherein the body location indicia include at least one of a pictorial image of body parts and a pictorial outline of a body with plural user selectable portions.

24. The method of claim 23, wherein the pictorial outline of a body is segmented into quadrants defining specific regions of the body.

25. The method of claim 23, wherein the pictorial outline of a body includes a detailed anterior outline of the body and a detailed posterior outline of the body.

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专利名称(译)	无线传感器和传感器初始化装置和方法		
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摘要(译)

传感器初始化设备包括具有用于多个无线传感器功能中的每一个的相应标记的面板。对于每个传感器功能标记,存在耦合到传感器功能标记的相应初始化电路,用于在选择传感器功能时通过面板到无线传感器单元的电子通信。传感器功能可包括体温,心率,血压,呼吸,心电图,脑电图,肌电图,眼电图和多导睡眠图。该面板还具有用于多个身体放置位置中的每一个的相应标记。在选择身体放置位置标记时,耦合到身体放置位置标记的相应初始化电路通过面板电子地传送到无线传感器单元。

