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(54) **USER TERMINAL APPARATUS AND DATA TRANSMISSION METHOD**

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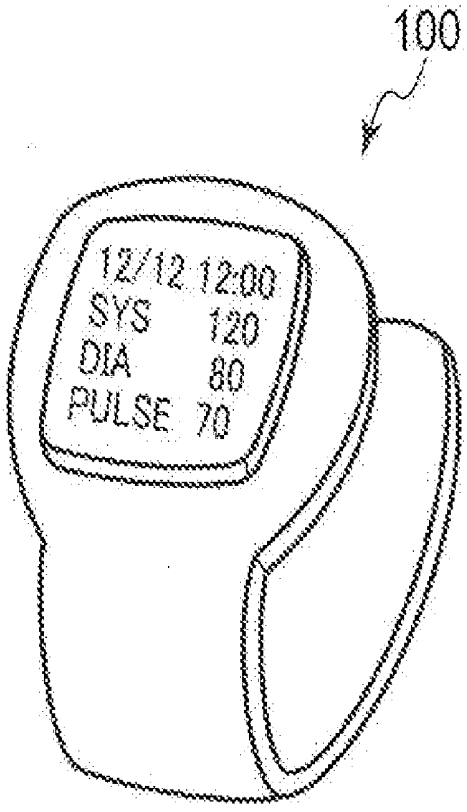
G16H 10/65	(2006.01)

(52) **U.S. Cl.**

CPC ***A61B 5/681*** (2013.01); ***G16H 10/65*** (2018.01); ***A61B 5/021*** (2013.01); ***H01Q 1/273*** (2013.01)

(57) **ABSTRACT**

According to one aspect, a user terminal apparatus includes a hardware processor and a memory connected to the hardware processor. The memory stores a plurality of blood pressure change patterns. The hardware processor is configured to acquire blood pressure data including a plurality of blood pressure values output from a blood pressure sensor configured to measure a blood pressure of a user, select a blood pressure change pattern corresponding to the blood pressure data from the plurality of blood pressure change patterns, and transmit transmission data including identification information identifying the selected blood pressure change pattern and part of the blood pressure data.



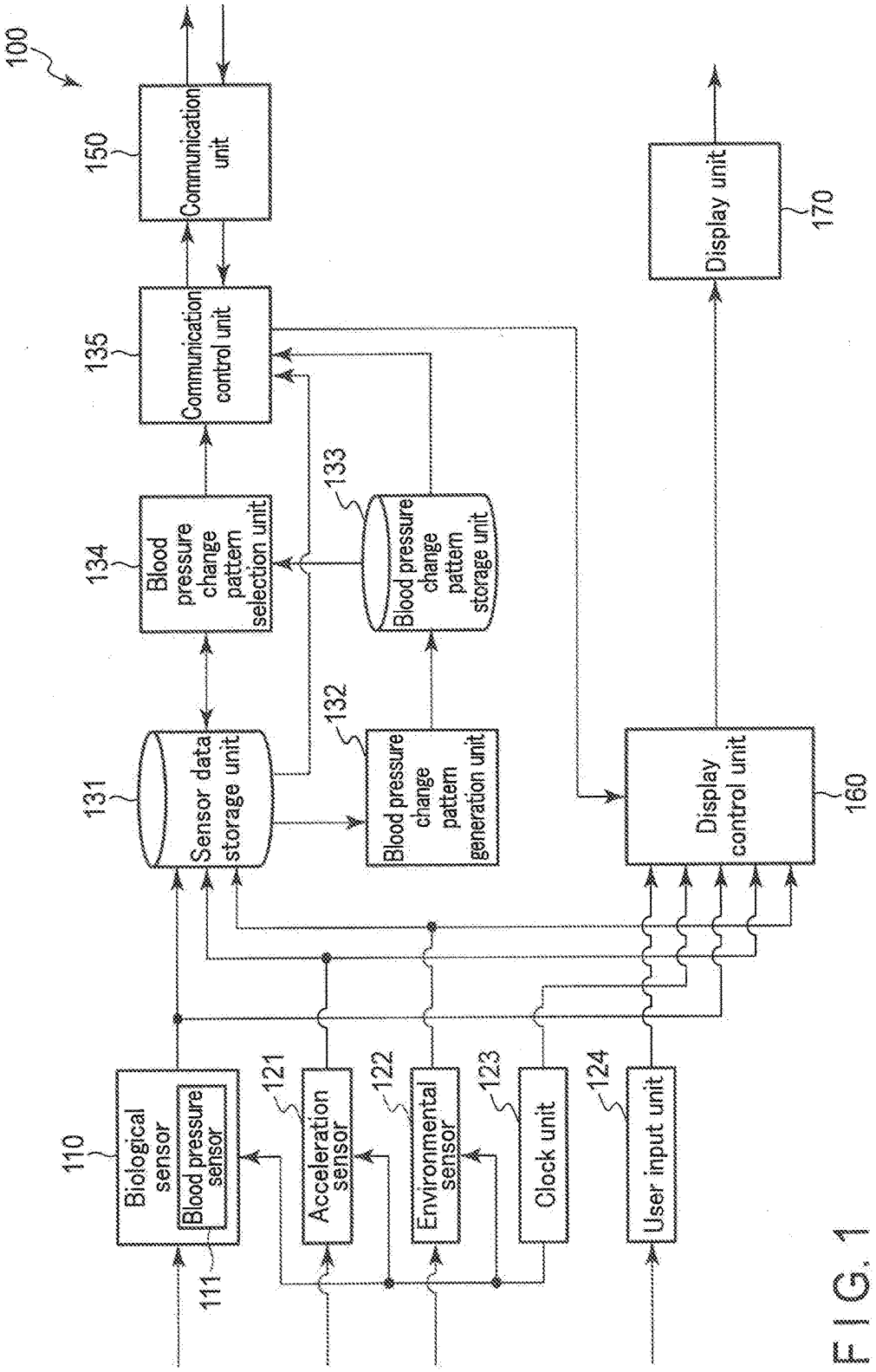

100
150
Communication unit
135
Communication control unit
134
Blood pressure change pattern selection unit
133
Blood pressure change pattern storage unit
131
Sensor data storage unit
132
Blood pressure change pattern generation unit
160
Display control unit
170
Display unit
110
Biological sensor
Blood pressure sensor
111
121
Acceleration sensor
122
Environmental sensor
123
Clock unit
124
User input unit

FIG. 1

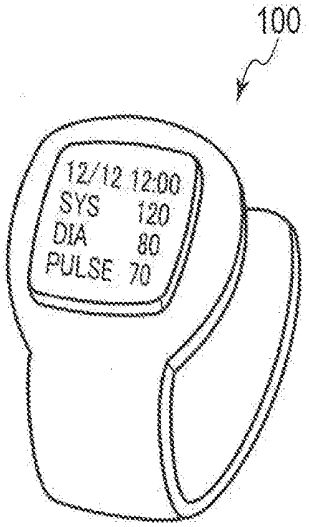


FIG. 2

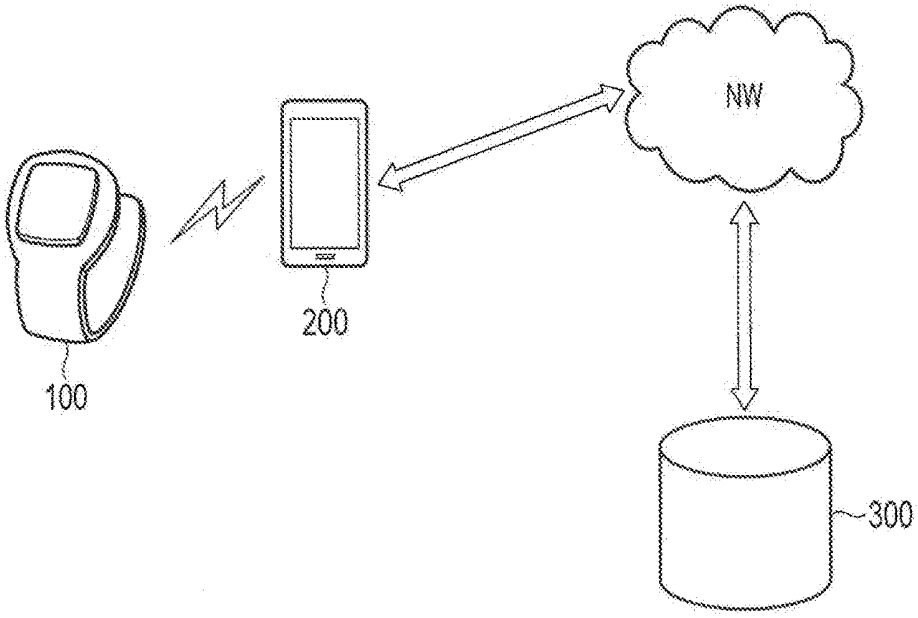


FIG. 3

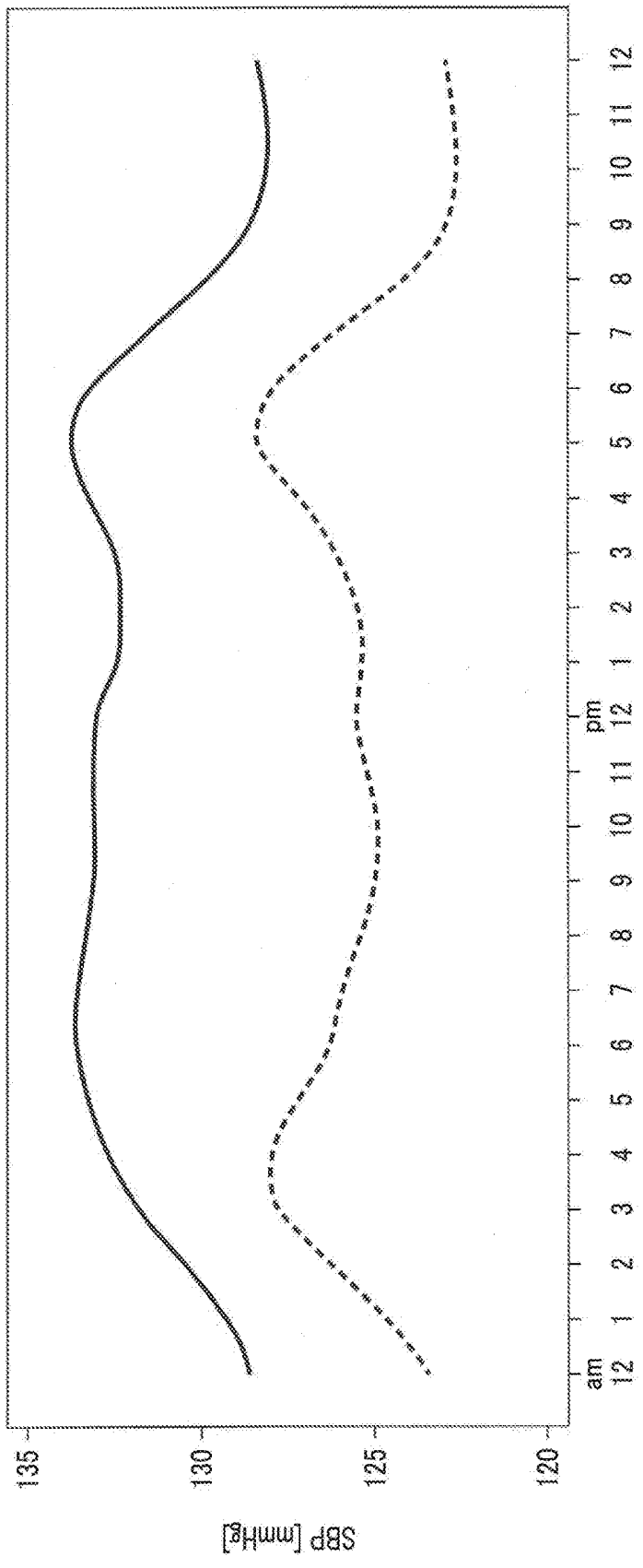

SBP [mmHg]
135
130
125
120
am
12
1
2
3
4
5
6
7
8
9
10
11
pm
12
1
2
3
4
5
6
7
8
9
10
11
12

FIG. 4

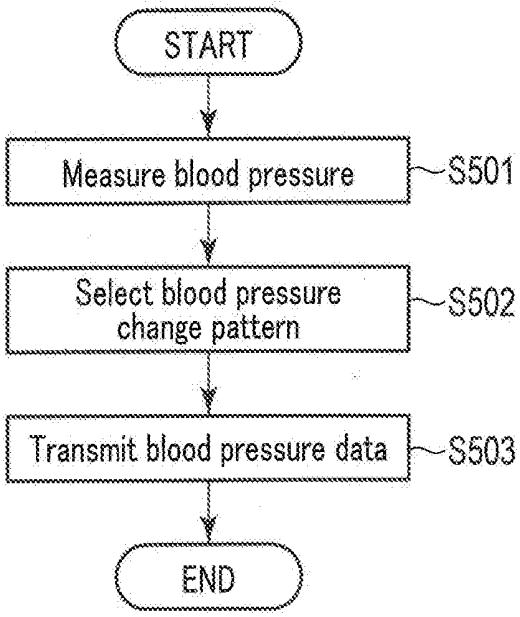

START
Measure blood pressure
S501
Select blood pressure change pattern
S502
Transmit blood pressure data
S503
END

FIG. 5

USER TERMINAL APPARATUS AND DATA TRANSMISSION METHOD

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a Continuation Application of PCT Application No. PCT/JP2017/044392, filed Dec. 11, 2017 and based upon and claiming the benefit of priority from Japanese Patent Application No. 2017-000241, filed Jan. 4, 2017, the entire contents of all of which are incorporated herein by reference.

FIELD

[0002] Embodiments of the present invention relate to a user terminal apparatus that measures biological information such as blood pressure.

BACKGROUND

[0003] Measurement results of the biological information of a user are used in various scenes such as health care. For example, Jpn. Pat. Appln. KOKAI Publication No. 9-276238 discloses a technique of sensing a data pattern such as a respiratory pattern or blood pressure pattern from a person to be diagnosed and outputting an alert when the sensed data pattern is substantially identical to a predetermined data pattern.

[0004] In recent years, with advances in sensor technology, for example, a user terminal apparatus has been implemented which can perform measurement (for example, continuous measurement) of the blood pressure of a user by being worn on a wrist of the user. This user terminal apparatus can measure the blood pressure of a user without applying much burden on the user.

[0005] To continuously measure the blood pressure of a user is to generate a large amount of blood pressure data. In order to entirely save a large amount of blood pressure data, a large-capacity storage device is required. Entirely transmitting a large amount of blood pressure data to an external device for, for example, analysis will apply a large load to a communication path with the external device and consume a large amount of power.

SUMMARY

[0006] A first aspect of the present invention is a user terminal apparatus including a blood pressure sensor configured to measure a blood pressure of a user and obtain blood pressure data including a plurality of blood pressure values, a storage unit configured to store a plurality of blood pressure change patterns, a selection unit configured to select a blood pressure change pattern corresponding to the blood pressure data from the plurality of blood pressure change patterns, and a transmission unit configured to transmit transmission data including identification information identifying the selected blood pressure change pattern and part of the blood pressure data.

[0007] According to the first aspect, when the blood pressure pattern obtained as a result of measurement by the blood pressure sensor matches the data of a blood pressure change pattern, transmission data including identification information identifying the blood pressure change pattern and part of the blood pressure data is transmitted to the external device. This allows the external device to acquire the blood pressure data without transmitting all the blood pressure data to the external device. The data of the identification information is much smaller than the blood pressure, and hence the amount of data transmitted can be reduced. That is, it is possible to reduce the power consumption associated with data transmission and the load applied to the communication path.

[0008] In a second aspect of the present invention, the selection unit is configured to calculate a degree of matching between the blood pressure data and each of the plurality of blood pressure change patterns, perform no selection when the highest degree of matching is less than a threshold, and select a blood pressure change pattern exhibiting the highest degree of matching from the plurality of blood pressure change patterns when the highest degree of matching exceeds the threshold.

[0009] According to the second aspect, when there is no blood pressure change pattern matching blood pressure data, blood pressure data is transmitted to an external device without being converted into a blood pressure change pattern. This allows the external device to obtain more accurate blood pressure data.

[0010] In a third aspect of the present invention, the user terminal apparatus further includes a generation unit configured to generate a blood pressure change pattern based on the blood pressure data, wherein the plurality of blood pressure change patterns include the generated blood pressure change pattern.

[0011] According to the third aspect, a blood pressure change pattern unique to a user is generated. This increases the possibility that blood pressure data will match a blood pressure change pattern and can further reduce the amount of data transmitted.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] FIG. **1** is a block diagram showing a user terminal apparatus according to one embodiment of the present invention;

[0013] FIG. **2** is a perspective view showing an example of the outer appearance of the user terminal apparatus shown in FIG. **1**;

[0014] FIG. **3** is a block diagram showing an example of the arrangement of a biological information management system including the user terminal apparatus shown in FIG. **1**;

[0015] FIG. **4** is a graph showing an example of blood pressure variation; and

[0016] FIG. **5** is a flowchart showing an example of a procedure in which the user terminal apparatus shown in FIG. **1** transmits blood pressure data.

DETAILED DESCRIPTION

[0017] According to an embodiment of the present invention, there is provided a user terminal apparatus and a data transmission method that can reduce the amount of data transmitted to an external device.

[0018] Hereinafter, embodiments of the present invention will be described with reference to the accompanying drawings.

[0019] FIG. **1** schematically shows a user terminal apparatus **100** according to one embodiment of the present invention. The user terminal apparatus **100** shown in FIG. **1** may be a wearable device such as a wristwatch-type wearable device illustrated in FIG. **2**. The user terminal apparatus

100 can measure biological information such as the systolic blood pressure (SBP), diastolic blood pressure (DBP), and heart rate of the user who wears the user terminal apparatus **100**. The user terminal apparatus **100** can display a measurement result together with information displayed on a general clock, such as a date and time.

[0020] As shown in FIG. **3**, the user terminal apparatus **100** may be connected to a smart device **200**. Typically, the smart device **200** may be a portable device such as a smartphone or tablet. The smart device **200** can display biological data transmitted by the user terminal apparatus **100** in a graphical form and transmit the biological data to a server **300** via a network NW. An application that manages biological data may be installed in the smart device **200**. Note that the user terminal apparatus **100** may be connected to the server **300** via the network NW without via the smart device **200**.

[0021] The server **300** stores biological data transmitted from the user terminal apparatus **100** or the smart device **200**. The server **300** may transmit the biological data in response to an access made from a personal computer (PC) installed in a medical institution to use the biological data, for example, for medical care guidance or diagnosis of the user. The server **300** can analyze a factor that causes a change in user state based on the stored biological data and generate an improvement proposal for setting the user state to a user state defined as better. The server **300** then can transmit the factor analysis result and the improvement proposal to the user terminal apparatus **100** or the smart device **200** to make the user browse them.

[0022] Referring to FIG. **1**, the user terminal apparatus **100** includes a biological sensor **110**, an acceleration sensor **121**, an environmental sensor **122**, a clock unit **123**, a user input unit **124**, a sensor data storage unit **131**, a blood pressure change pattern generation unit **132**, a blood pressure change pattern storage unit **133**, a blood pressure change pattern selection unit **134**, a communication control unit **135**, a communication unit **150**, a display control unit **160**, and a display unit **170**.

[0023] The biological sensor **110** measures the biological information of the user to obtains biological data, and sends the biological data to the sensor data storage unit **131** and the display control unit **160**. The biological sensor **110** includes at least a blood pressure sensor **111** that measures the blood pressure of the user to obtain blood pressure data. That is, biological data includes at least blood pressure data. In addition, the biological data may include electrocardiogram data, heart rate data, pulse wave data, pulsation data, and body temperature data. Each biological data can be associated with measurement time set based on the time information received from the clock unit **123**.

[0024] According to this embodiment, the blood pressure sensor **111** includes a continuous blood pressure sensor. The continuous blood pressure sensor is a blood pressure sensor capable of continuously measuring blood pressures per heartbeat (for example, a systolic blood pressure and a diastolic blood pressure). The continuous blood pressure sensor can be based on a technique of measuring a pulse transmit time (PTT) and estimating a blood pressure from the measured pulse transmit time, a tonometry method, or another technique. Blood pressure data includes, but is not limited to, a systolic blood pressure value and a diastolic blood pressure value per heartbeat.

[0025] The blood pressure sensor **111** may further include a noncontinuous blood pressure sensor. A noncontinuous blood pressure sensor includes, as an example, a blood pressure sensor being based on an oscillometric method of measuring a blood pressure by using cuff as a pressure sensor. The noncontinuous blood pressure sensor (an oscillometric blood pressure sensor in particular) tends to have higher measurement accuracy than a continuous blood pressure sensor. Accordingly, the blood pressure sensor **111** is triggered by, for example, satisfying a certain condition (for example, when the blood pressure data of the user measured by the continuous blood pressure sensor indicates a predetermined high risk state) to operate the noncontinuous blood pressure sensor in place of the continuous blood pressure sensor, thereby measuring blood pressure data with high accuracy.

[0026] The acceleration sensor **121** detects the acceleration applied to the acceleration sensor **121** to obtain three-axis acceleration data. This acceleration data can be used to estimate the activity state (posture and/or action) of the user wearing the user terminal apparatus **100**. The acceleration sensor **121** sends the acceleration data to the sensor data storage unit **131** and the display control unit **160**. The acceleration data can be associated with the measurement time set based on the time information received from the clock unit **123**.

[0027] The environmental sensor **122** measures environmental information around the user terminal apparatus **100** to obtain environmental data, and sends the environmental data to the sensor data storage unit **131** and the display control unit **160**. The environmental data may include temperature data, humidity data, and atmospheric pressure data. Each environmental data can be associated with the measurement time set based on the time information received from the clock unit **123**.

[0028] The clock unit **123** generates time information representing the current time in a predetermined cycle, and sends the time information to the biological sensor **110**, the acceleration sensor **121**, the environmental sensor **122**, and the display control unit **160**. Time information can be used as the time of measurement of biological data by the biological sensor **110**, the time of measurement of acceleration data by the acceleration sensor **121**, and the time of measurement of environmental data by the environmental sensor **122**. The clock unit **123** may include a calendar function. That is, the clock unit **123** may generate date information representing the current date and send the date information to the display control unit **160**.

[0029] The user input unit **124** includes, for example, buttons and dials for the reception of user inputs. Alternatively, a combination of the user input unit **124** and the display unit **170** (to be described later) may be implemented by using a touch screen. A user input is, for example, the operation of controlling the display screen of the display unit **170**.

[0030] The sensor data storage unit **131** stores the biological data output from the biological sensor **110**, the acceleration data output from the acceleration sensor **121**, and the environmental data output from the environmental sensor **122**. As described above, biological data includes blood pressure data.

[0031] A blood pressure change pattern generation unit **132** acquires blood pressure data from the sensor data storage unit **131** and generates a blood pressure change

pattern based on the blood pressure data. The blood pressure change pattern is a pattern indicating a change (temporal variation) in blood pressure value in a unit period. More specifically, a blood pressure change pattern corresponds to a waveform and is expressed by a relative blood pressure value. In other words, in order to reproduce blood pressure data by using a blood pressure change pattern, at least one data value is required. A unit period is, but is not limited to, 1 min, 1 hr, or 1 day. A blood pressure value change indicates a different pattern for each user. A blood pressure value change indicates a different pattern for each temporal condition such as each season, day, or a biological clock (circadian rhythm). A blood pressure value change indicates a different pattern in accordance with a user state (for example, awaking, standing, seating, exercising, stress, movement from indoor to outdoor, or bathing). The blood pressure change pattern generation unit **132** can generate a blood pressure change pattern for each of many conditions. The communication unit **150** (to be describe later) transmits the data of the blood pressure change pattern generated by the blood pressure change pattern generation unit **132** to an external device such as the smart device **200** or the server **300** shown in FIG. **2**.

[0032] This allows both the user terminal apparatus **100** and the external device to hold the data of the blood pressure change pattern. The blood pressure change pattern may be provided in any format, for example, a data set or function.

[0033] A blood pressure change pattern storage unit **133** stores a plurality of blood pressure change patterns generated by the blood pressure change pattern generation unit **132**. Identification information is given to each blood pressure change pattern. The blood pressure change pattern storage unit **133** may store a plurality of blood pressure change patterns prepared in advance. These blood pressure change patterns can be generated based on the blood pressure data obtained from many subjects. In this case, the user terminal apparatus **100** may or may not include the blood pressure change pattern generation unit **132**. The blood pressure change pattern generated by the blood pressure change pattern generation unit **132** is a blood pressure change pattern unique to the user, and is likely to be selected by the blood pressure change pattern selection unit **134** (to be described later). Any blood pressure change pattern that is selected at a low frequency may be deleted from the blood pressure change pattern storage unit **133**.

[0034] The blood pressure change pattern selection unit **134** selects a blood pressure change pattern corresponding to blood pressure data in a unit period extracted from blood pressure data among a plurality of blood pressure change patterns stored in the blood pressure change pattern storage unit **133**, and sends identification information identifying the selected blood pressure change pattern to the communication control unit **135**. For example, the blood pressure change pattern selection unit **134** extracts blood pressure data in a unit period from blood pressure data, calculates the degree of matching between the extracted blood pressure data in a unit period and each of a plurality of blood pressure change patterns, and selects a blood pressure change pattern exhibiting the highest degree of matching. If the highest degree of matching is less than a threshold, no blood pressure change pattern may be selected. In this case, the blood pressure data in the unit period is not converted into a blood pressure change pattern, and can be transmitted to an external device. The blood pressure change pattern selection unit **134** may further send identification information identifying the selected blood pressure change pattern to the sensor data storage unit **131**. This makes it possible to replace the blood pressure data in the unit period with blood pressure data including the identification information and part of the blood pressure data. Because the data amount of the identification information is much smaller than blood pressure data, the amount of data stored in the sensor data storage unit **131** can be reduced.

[0035] The communication control unit **135** controls the communication unit **150**. The communication control unit **135** generates transmission data including the identification information received from the blood pressure change pattern selection unit **134** and part of corresponding blood pressure data in a unit period, and sends the generated transmission data to the communication unit **150**. Part of the blood pressure data in the unit period is, for example, one blood pressure value (for example, the first blood pressure value in the unit period). The communication control unit **135** can further generate transmission data including the data of the blood pressure change pattern generated by the blood pressure change pattern generation unit **132** and identification information identifying the blood pressure change pattern.

[0036] The communication unit **150** exchanges data with an external device such as the smart device **200** or the server **300** shown in FIG. **2**. The communication unit **150** performs one or both of wireless communication and wired communication. For example, the communication unit **150** performs short-range wireless communication such as Bluetooth® with the smart device **200**. The communication unit **150** receives transmission data from the communication control unit **135**, and transmits the data to the external device. The communication unit **150** receives data from the external device and forwards the received data to the communication control unit **135**.

[0037] The display control unit **160** controls the display unit **170**. More specifically, the display control unit **160** generates screen data and sends it to the display unit **170**. The display control unit **160** can generate screen data based on biological data from the biological sensor **110**, acceleration data from the acceleration sensor **121**, environmental data from the environmental sensor **122**, time information and date information from the clock unit **123**, a factor analysis result and an improvement proposal from the communication control unit **135**, and the like. The display control unit **160** may select information to be used to generate screen data in accordance with a user input corresponding to an operation concerning control of the display screen of the display unit **170**.

[0038] The display unit **170** is, for example, a liquid crystal display or organic electroluminescence (EL) display. The display unit **170** can notify the user of various information by displaying screen data from the display control unit **160**. More specifically, the display unit **170** may display biological information (for example, a blood pressure, electrocardiogram, heart rate, pulse wave, pulse rate, and body temperature), acceleration data, activity amount information (for example, the number of steps counted based on acceleration data and a consumed calorie), sleep information (for example, a sleep time), environmental information (for example, a temperature, humidity, and atmospheric pressure), a factor analysis result, an improvement proposal, the current time, a calendar, and the like.

[0039] FIG. **4** shows an example of blood pressure variation. Referring to FIG. **4**, the solid line represents variations in systolic blood pressure value of a given male user per day, and the broken line represents variations in systolic blood pressure value of a given female user per day. The waveforms shown in FIG. **4** can be generated as blood pressure change patterns.

[0040] The unit time may be changed as needed. In this case, the blood pressure change pattern storage unit **133** holds blood pressure change patterns in different unit times. For example, the unit time can be changed in accordance with the state of the user. When, for example, a user with a sleep apnea syndrome uses the user terminal apparatus **100**, detailed blood pressure data is required to be obtained while the user is sleeping. Accordingly, for example, the unit time is reduced to obtain detailed blood pressure data while the user is sleeping, whereas the unit time is increased to further reduce the amount of data transmitted while the user is awake. Whether the user is sleeping can be detected by using a sensor like the acceleration sensor **121**. In another case, the unit time can be changed in accordance with a time zone. For example, blood pressure values in time zones before and after bedtime and time zones before and after wake-up are considered important in health care. Accordingly, the unit time in the time zones from 22:00 to 24:00 and in the time zone from 5:00 to 7:00 are reduced to obtain detailed blood pressure data. The unit times in other time zones are increased to further reduce the amount of transmission data.

[0041] The user terminal apparatus **100** includes, for example, a central processing unit (CPU) and a memory as hardware. The memory includes a read only memory (ROM), random access memory (RAM), and secondary storage device. Various types of functions of the user terminal apparatus **100** can be implemented by causing the CPU to read out a program from the ROM or secondary storage device into the RAM and executing the program. As the secondary storage device, for example, a semiconductor memory or hard disk drive (HDD) can be used. The secondary storage device includes the sensor data storage unit **131** and the blood pressure change pattern storage unit **133**. Note that some or all of the functions of the user terminal apparatus **100** may be implemented by hardware such as IC chips.

[0042] An operation of the user terminal apparatus **100** will be described next.

[0043] FIG. **5** shows an example of a procedure in which the user terminal apparatus **100** transmits blood pressure data.

[0044] Consider, for the sake of simplicity, a case in which blood pressure data in a unit time is acquired by using the blood pressure sensor, and the blood pressure data is transmitted to an external device. In step **S501** in FIG. **5**, the blood pressure sensor **111** continuously measures the blood pressure of the user, and obtains blood pressure data including a plurality of blood pressure values. Blood pressure data includes, for example, time-series data associated with a systolic blood pressure value, a diastolic blood pressure value, or both of them.

[0045] In step **S502**, the blood pressure change pattern selection unit **134** selects a blood pressure change pattern corresponding to blood pressure data from a plurality of blood pressure change patterns stored in the blood pressure change pattern storage unit **133**. In step **S503**, the communication unit **150** transmits transmission data including identification information identifying the blood pressure change pattern selected by the blood pressure change pattern selection unit **134** and one data value of the blood pressure data.

[0046] As described above, in this embodiment, when the blood pressure data obtained as a result of continuous measurement by the blood pressure sensor matches the data of a blood pressure change pattern, the user terminal apparatus transmits transmission data including identification information identifying the blood pressure change pattern and part of the blood pressure data to the external device. This makes it possible for the external device to acquire blood pressure data without transmitting all the blood pressure data to the external device. Because the data amount of identification information is much smaller than blood pressure data, the amount of data transmitted can be reduced. That is, this can reduce the power consumption associated with data transmission and the load applied to the communication path.

[0047] In another embodiment, a blood pressure sensor includes a noncontinuous blood pressure sensor without including any continuous blood pressure sensor. Even in this case, the blood pressure sensor measures blood pressures at a plurality of time points, and hence blood pressure data includes a plurality of blood pressure values. In another embodiment, therefore, processing blood pressure data in the same manner as in the above embodiment can obtain the same effects as those of the above embodiment.

[0048] Note that the present invention is not limited to each embodiment described above, and elements can be modified and embodied in the execution stage within the spirit and scope of the invention. In addition, various inventions can be formed by proper combinations of a plurality of elements disclosed in the above embodiments. For example, several elements may be omitted from all the elements disclosed in the above embodiments. Furthermore, elements in different embodiments may be properly combined.

[0049] Although some or all of the embodiments described above can be described as in the following supplementary note as well as in the scope of claims, this is not exhaustive.

[0050] (Supplementary Note 1)

[0051] A user terminal apparatus comprising:

[0052] a hardware processor; and

[0053] a memory connected to the hardware processor,

[0054] wherein the memory includes a storage unit configured to store a plurality of blood pressure change patterns, and

[0055] the hardware processor is configured to:

[0056] acquire blood pressure data including a plurality of blood pressure values output from a blood pressure sensor configured to measure a blood pressure of a user;

[0057] select a blood pressure change pattern corresponding to the blood pressure data from the plurality of blood pressure change patterns; and

[0058] transmit transmission data including identification information identifying the selected blood pressure change pattern and part of the blood pressure data.

[0059] (Supplementary Note 2)

[0060] A data transmission method comprising:

[0061] obtaining, by a hardware processor, blood pressure data including a plurality of blood pressure values output from a blood pressure sensor configured to measure a blood pressure of a user;

[0062] selecting, by a hardware processor, a blood pressure change pattern corresponding to the blood pressure data from a plurality of blood pressure change patterns; and

[0063] transmitting, by a hardware processor, transmission data including identification information identifying the selected blood pressure change pattern and part of the blood pressure data.

1. A user terminal apparatus comprising:

a hardware processor; and

a memory connected to the hardware processor,

wherein the memory is configured to store a plurality of blood pressure change patterns, and

the hardware processor is configured to:

acquire blood pressure data including a plurality of blood pressure values output from a blood pressure sensor configured to measure a blood pressure of a user;

select a blood pressure change pattern corresponding to the blood pressure data from the plurality of blood pressure change patterns; and

transmit transmission data including identification information identifying the selected blood pressure change pattern and part of the blood pressure data.

2. The user terminal apparatus according to claim **1**, wherein the hardware processor is configured to calculate a degree of matching between the blood pressure data and each of the plurality of blood pressure change patterns, perform no selection when the highest degree of matching is less than a threshold, and select a blood pressure change pattern exhibiting the highest degree of matching from the plurality of blood pressure change patterns when the highest degree of matching exceeds the threshold.

3. The user terminal apparatus according to claim **1**, wherein the hardware processor is further configured to generate a blood pressure change pattern based on the blood pressure data, and

the plurality of blood pressure change patterns include the generated blood pressure change pattern.

4. A data transmission method comprising:

obtaining blood pressure data including a plurality of blood pressure values output from a blood pressure sensor configured to measure a blood pressure of a user;

selecting a blood pressure change pattern corresponding to the blood pressure data from the plurality of blood pressure change patterns; and

transmitting transmission data including identification information identifying the selected blood pressure change pattern and part of the blood pressure data.

* * * * *

专利名称(译)	用户终端装置和数据传输方法		
公开(公告)号	US20190313972A1	公开(公告)日	2019-10-17
申请号	US16/454308	申请日	2019-06-27
[标]申请(专利权)人(译)	欧姆龙株式会社 欧姆龙健康医疗事业株式会社		
申请(专利权)人(译)	欧姆龙公司 欧姆龙保健CO.，LTD.		
当前申请(专利权)人(译)	欧姆龙公司 欧姆龙保健CO.，LTD.		
[标]发明人	HORIGUCHI NATSUKO NAKAJIMA HIROSHI KUKITA TOMOHIRO WADA HIROTAKA UEDA TAMIO		
发明人	HORIGUCHI, NATSUKO NAKAJIMA, HIROSHI KUKITA, TOMOHIRO WADA, HIROTAKA UEDA, TAMIO		
IPC分类号	A61B5/00 H01Q1/27 A61B5/021 G16H10/65		
CPC分类号	G16H10/65 A61B5/021 H01Q1/273 A61B5/681		
优先权	2017000241 2017-01-04 JP		
外部链接	Espacenet USPTO		

摘要(译)

根据一个方面，一种用户终端设备包括硬件处理器和连接到该硬件处理器的存储器。存储器存储多个血压变化模式。硬件处理器被配置为获取包括从被配置为测量用户的血压的血压传感器输出的包括多个血压值的血压数据，从多个血压中选择与该血压数据相对应的血压变化模式。血压改变模式，并发送包括识别信息的传输数据，该识别信息识别所选择的血压改变模式和部分血压数据。