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(54) SYSTEM AND METHOD FOR INTERPRETING A USERS PYSCHOLOGICAL STATE FROM SENSED BIOMETRIC INFORMATION AND COMMUNICATING THAT STATE TO A SOCIAL NETWORKING SITE

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A61B 5/00 (2006.01)

(52) **U.S. Cl.** **600/301**

(57) **ABSTRACT**

The present invention is a mood sensing and communicating system and method that includes a biometric sensor configured to sense biometric information from a person. A mood interpretive system is supported on a computing device or on a remote server. The mood interpretive system is in communication with the biometric sensor and is configured to assign a psychological or emotional mood state with the sensed biometric information. A communication system is supported on the computing device and is configured to communicate the assigned psychological mood state across an Internet to a web-site for positing on a web page. The method includes sensing biometric information from a user with a biometric sensor, associating a psychological mood state with the sensed biometric information with a mood interpretive module, and communicating the assigned psychological mood state to a web-site supported on a server across an Internet.

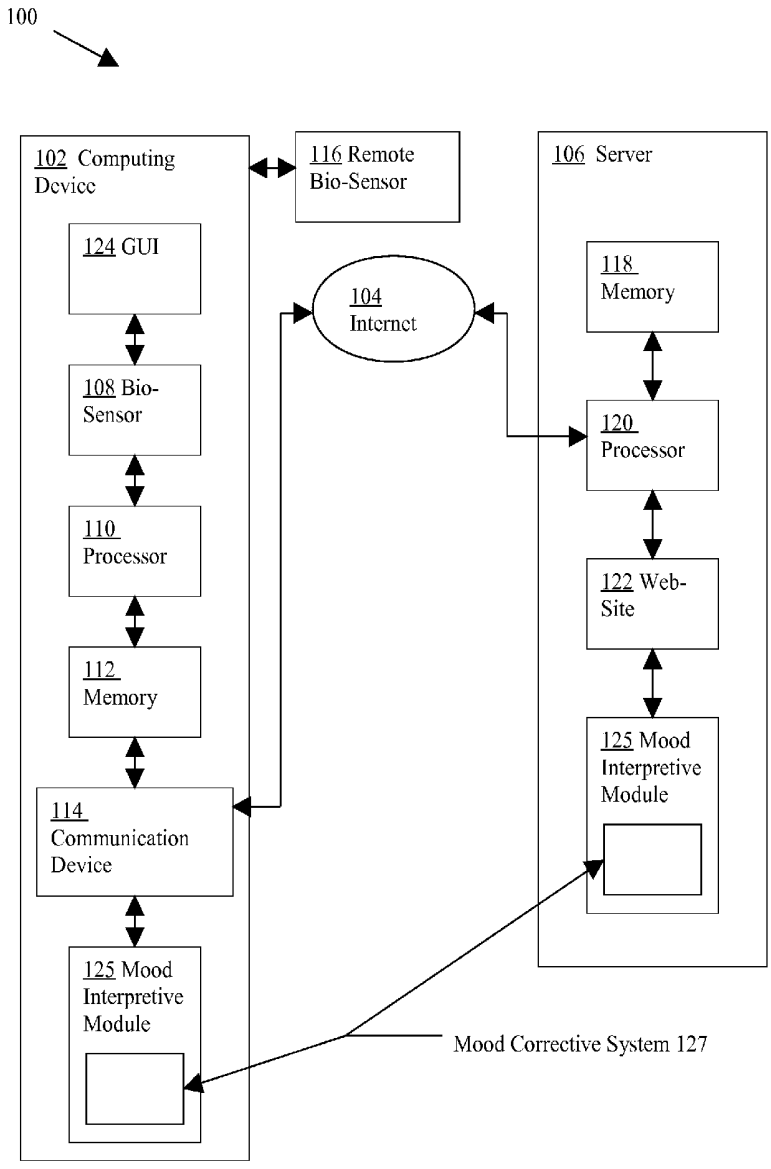


FIG. 1

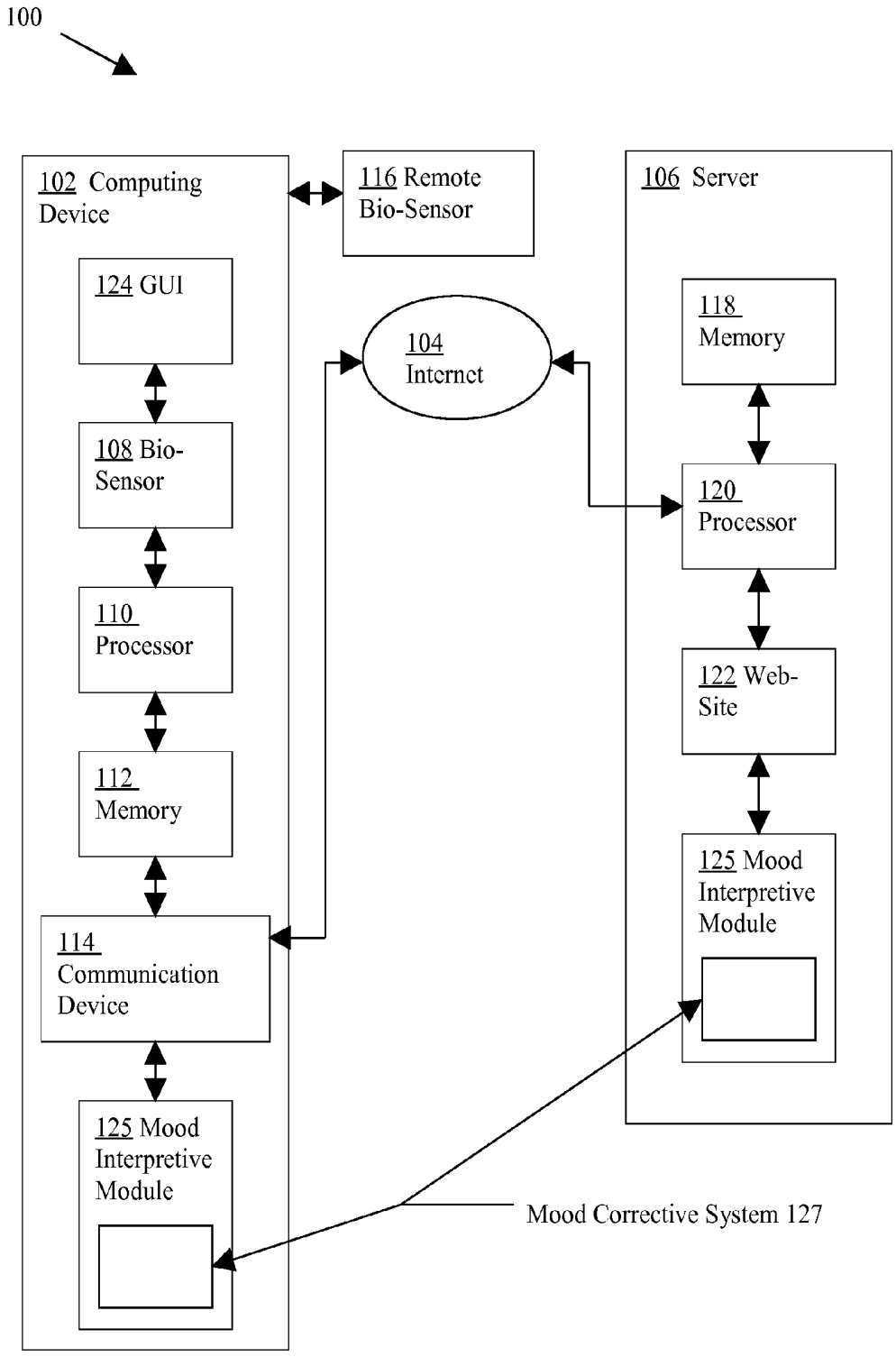

100
102 Computing Device
116 Remote Bio-Sensor
106 Server
124 GUI
104 Internet
118 Memory
108 Bio-Sensor
120 Processor
110 Processor
122 Web-Site
112 Memory
125 Mood Interpretive Module
114 Communication Device
125 Mood Interpretive Module
Mood Corrective System 127

FIG. 2

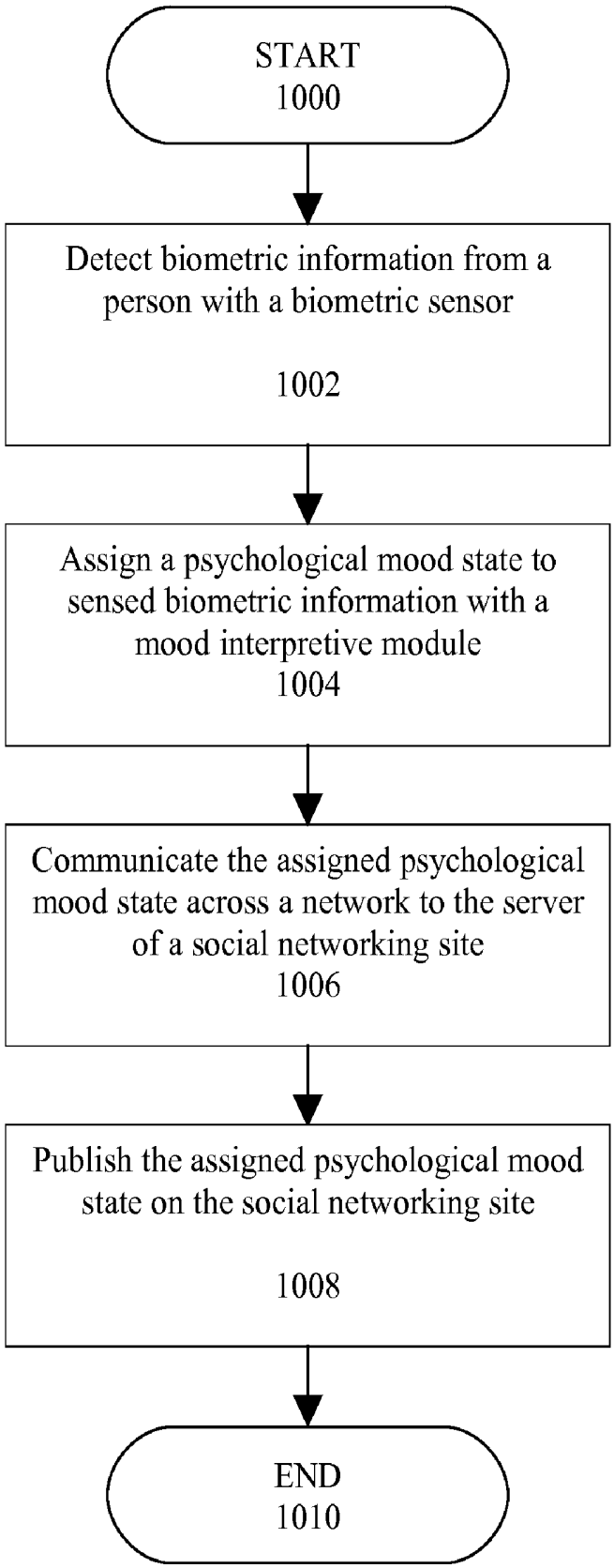

START
1000
Detect biometric information from a person with a biometric sensor
1002
Assign a psychological mood state to sensed biometric information with a mood interpretive module
1004
Communicate the assigned psychological mood state across a network to the server of a social networking site
1006
Publish the assigned psychological mood state on the social networking site
1008
END
1010

FIG. 3

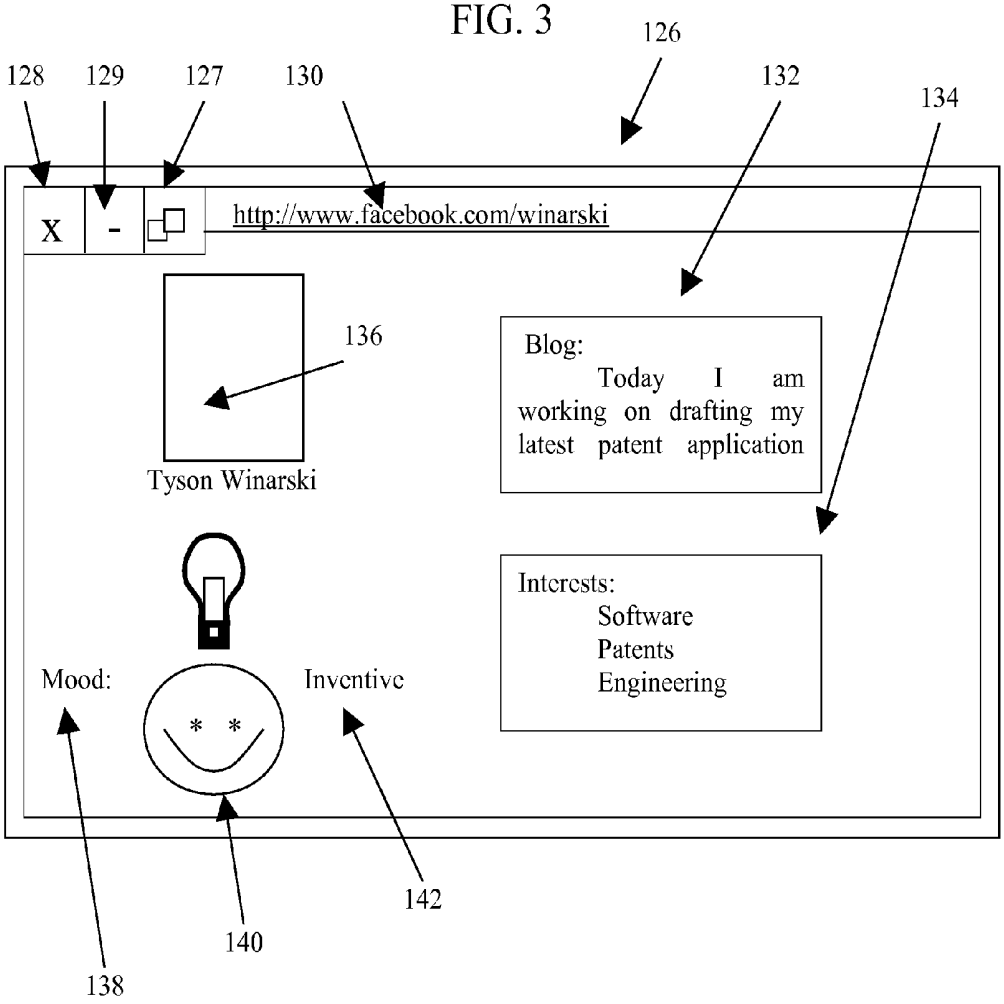

126
128
129
127
130
132
134
X
-
http://www.facebook.com/winarski
136
Blog:
Today I am working on drafting my latest patent application
Tyson Winarski
Interests:
Software
Patents
Engineering
Mood:
Inventive
* *
138
140
142

FIG. 4

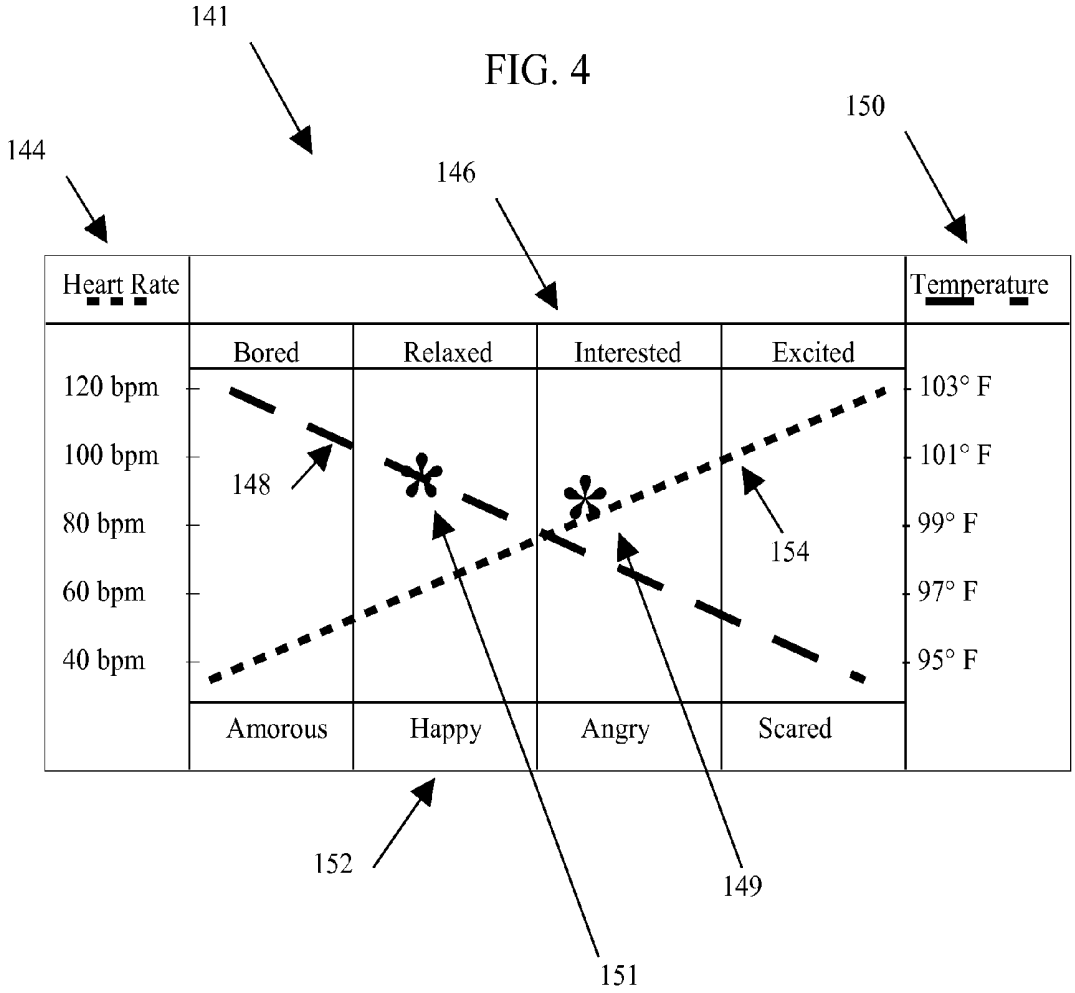

141
144
146
150
Heart Rate
Temperature
Bored
Relaxed
Interested
Excited
120 bpm
100 bpm
80 bpm
60 bpm
40 bpm
103° F
101° F
99° F
97° F
95° F
148
154
Amorous
Happy
Angry
Scared
152
149
151

FIG. 5

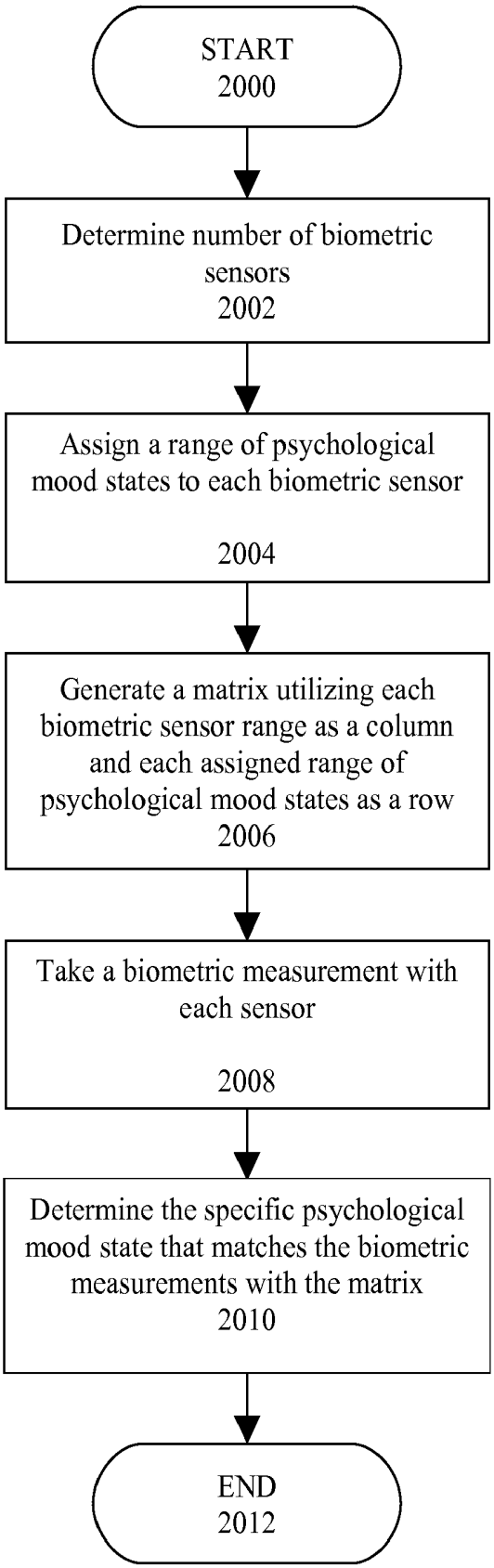
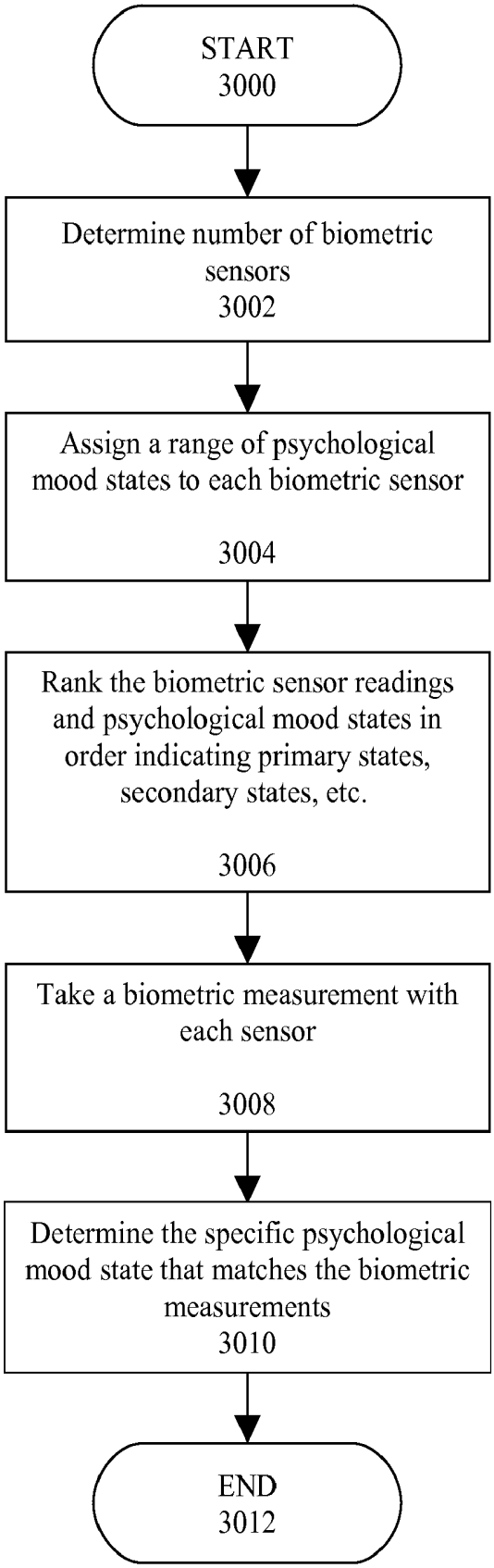

START
2000
Determine number of biometric sensors
2002
Assign a range of psychological mood states to each biometric sensor
2004
Generate a matrix utilizing each biometric sensor range as a column and each assigned range of psychological mood states as a row
2006
Take a biometric measurement with each sensor
2008
Determine the specific psychological mood state that matches the biometric measurements with the matrix
2010
END
2012

FIG. 6


START
3000
Determine number of biometric sensors
3002
Assign a range of psychological mood states to each biometric sensor
3004
Rank the biometric sensor readings and psychological mood states in order indicating primary states, secondary states, etc.
3006
Take a biometric measurement with each sensor
3008
Determine the specific psychological mood state that matches the biometric measurements
3010
END
3012

SYSTEM AND METHOD FOR INTERPRETING A USERS PYSCHOLOGICAL STATE FROM SENSED BIOMETRIC INFORMATION AND COMMUNICATING THAT STATE TO A SOCIAL NETWORKING SITE

FIELD OF THE INVENTION

[0001] This invention relates to systems that can interpret a psychological or emotional state of a person from sensed biometric information and communicate that state across an Internet to a social networking site.

BACKGROUND OF THE INVENTION

[0002] Social Networking Websites such as www.myspace.com, www.facebook.com, and the like allow user-members to post their "mood" on their member-profile pages. These mood indicators can include psychological or emotional states such as being happy, sad, grumpy, frustrated, sleepy, stressed, relaxed, fussy, etc. Typically, these mood indicators are accompanied by a mood icon such as a yellow smiley face that displays the assigned mood. At present, user-members post their mood on their member-profile pages by manually selecting a mood from a menu. Manual selection of a mood allows user-members to post a mood that may not actually reflect their true mood.

SUMMARY OF THE INVENTION

[0003] The present invention is a mood sensing and communicating system that includes a biometric sensor configured to sense biometric information from a person. The system further includes a computing device. A mood interpretive module is supported on the computing device. The mood interpretive module is in communication with the biometric sensor and is configured to assign a psychological mood state with the sensed biometric information. A communication system is supported on the computing device and is configured to communicate the assigned psychological or emotional mood state across an Internet to a web-site for positing on a web page.

[0004] The present invention is also a method for sensing and communicating a user's mood. The method includes sensing biometric information from a user with a biometric sensor, associating a psychological or emotional mood state with the sensed biometric information with a mood interpretive module, and communicating the assigned psychological mood state to a web-site supported on a server across an Internet.

[0005] The present invention further includes a method for sensing and communicating a user's mood. The method includes sensing a vocal signature of a user with a microphone, associating a psychological mood state with the sensed vocal signature, storing the assigned psychological mood state in a memory, and communicating the assigned psychological mood state across a network to a web-site supported on a server.

[0006] Further aspects of the invention will become apparent as the following description proceeds and the features of novelty which characterize this invention are pointed out with particularity in the claims annexed to and forming a part of this specification.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] The novel features that are considered characteristic of the invention are set forth with particularity in the appended claims. The invention itself; however, both as to its structure and operation together with the additional objects and advantages thereof are best understood through the following description of the preferred embodiment of the present invention when read in conjunction with the accompanying drawings.

[0008] FIG. **1** illustrates a block diagram of a system for sensing and communicating a user's mood.

[0009] FIG. **2** illustrates a flow chart depicting a process for sensing and communicating a user's mood.

[0010] FIG. **3** illustrates a screen shot from a graphical user interface depicting a web-site screen of a user-member profile from a social networking site.

[0011] FIG. **4** illustrates a graphical representation of a mood interpretive module associating biometric information with psychological mood states.

[0012] FIG. **5** illustrates a flow chart depicting a process for associating biometric information with a specific psychological mood state.

[0013] FIG. **6** illustrates a flow chart depicting an alternate process for associating biometric information with a specific psychological mood state.

DETAILED DESCRIPTION OF THE INVENTION

[0014] This invention is described in preferred embodiments in the following description with reference to the Figures, in which like numbers represent the same or similar elements. While this invention is described in terms of the best mode for achieving this invention's objectives, it will be appreciated by those skilled in the art that variations may be accomplished in view of these teachings without deviating from the spirit or scope of the invention.

[0015] FIG. **1** illustrates a block diagram of a system **100** for sensing and communicating a user's mood. System **100** includes a computing device **102**. Computing device **102** may be a cellular phone, a desktop computer, a laptop computer, a Personal Digital Assitant (PDA), a wireless device such as a Blackberry®, or any other device that includes a processor **110** and memory **112** and is capable of communicating with a computer network. Computing device **102** is in communication with a server **106** through an Internet **104**. Computing device **102** includes a bio-sensor **108**, a processor **110**, memory **112**, a communication device **114**, and a Graphical User Interface (GUI) **124**. Communication device **102** may also be coupled to a remote bio-sensor **116**. Processor **110** is in bidirectional communication with memory **112**, communication device **114**, bio-sensor **108**, remote bio-sensor **116**, and GUI **124**. Bio-sensor **108** is housed within computing device **102**. Remote bio-sensor **116** is coupled to processor **110** in computing device **102** through a connection such as USB, fire-wire, a parallel port connection, Bluetooth or other electrical communications link that allows for bidirectional communication.

[0016] Bio-sensors **108** and **116** are configured to sense biometric information from a person. Such biometric information can include body temperature, skin temperature, heart

rate, blood oxygen levels, vocal signature, skin moisture, or other biological features of a person indicative of an emotional state. Bio-sensors **108** and **116** may include microphones on a cell phone that measure vocal signatures of a person when they are speaking during a phone call for example. Bio-sensors **108** and **116** may also include temperature sensors to measure a person's skin or body temperature. Bio-sensors **108** and **116** may devices that measure blood oxygen levels and heart rates such as lasers, or electrical contacts that measure electrical conductivity of a person. Bio-sensors **108** and **116** may include moisture detectors that measure a person's skin moisture.

[0017] Bio-sensors **108** are integrated with computing device **102**. Bio-sensors **108** that are integrated with computing device **102** are highly desirable for computing devices that are portable such as cellular phones, PDA's, or other wireless and mobile devices. Bio-sensors **116** may be used with all computing devices **102**, but most particularly desktop computers and laptop computers. Bio-sensors **116** may take the form of a being integrated in an existing device that is remotely coupled to a desktop or laptop computer such as a computer mouse, a keyboard, a microphone, or other remotely coupled device that is capable of housing bio-sensors **116**.

[0018] Computing device **102** also includes a mood interpretive module **125**. A person's psychological or emotional mood state may be determined through sensing biometric information from the person with bio-sensors **108** and **116**. Such biometric information that can indicate a person's mood includes body temperature, skin temperature, heart rate, blood oxygen levels, vocal signature, skin moisture, or other biological features of a person. For example, psychological mood states such as happiness, sadness, excitement, anger, boredom, relaxation, stress, being tired, and other psychological mood states can be determined from sensing body temperature, skin temperature, heart rate, blood oxygen levels, vocal signature, skin moisture, or other biological features of a person. While a psychological mood state can be inferred from any single biometric indicator, more sophisticated determinations of a person's psychological mood state can be determined by measuring multiple biometric indicators and combining those results to assign a psychological mood state.

[0019] Mood interpretive module **125** is supported on computing device **102** and is in unidirectional or bidirectional communication with bio-sensors **108** and **116**. Sensors are typically unidirectional communication devices, but could be bidirectional if their sensitivity is adjusted by processor **110**. Mood interpretive module **125** receives biometric information sensed by bio-sensors **108** and **116**. Mood interpretive module **125** then compiles the sensed biometric information and associates a psychological mood state to the sensed information. The mood interpretive module operates to find a single solution (i.e. a psychological mood state) to a system having multiple variables (i.e. different sensed biometric parameters). Methods of solving multiple variable systems for a single solution are well known and exist in many varieties, such as equations, matrices, neural networks, and other methods. Exemplary processes of assigning a psychological mood state to the sensed information are provided in FIGS. **5** and **6**. Mood interpretive module **125** may, for example, have the form of a neural network that assigns specific psychological mood states to one or more sensed biometric parameters. Mood interpretive module **125** may also take the form of a matrix formed of psychological mood states and biometric parameters. Specific mood states are determined in this embodiment by matching sensed biometric information to specific mood states in the matrix. Mood interpretive module **125** may include a mood corrective system **127**. The mood corrective system **127** allows a user to manually review the operation of the mood interpretive module **125** and manually adjust the psychological mood states selected by the mood interpretive system **125** in response to the sensed biometric information. Mood corrective system **127** includes a touch-screen GUI that allows a user to manually associate ranges of sensed biometric information with psychological mood states. When bio-sensors **108** or **116** are in continuous contact with a user, mood interpretive system **125** may be programmed to periodically take readings from bio-sensors **108** or **116** to periodically update the psychological mood state of the user in real time. These periodic updates by mood interpretive system **125** may be periodically updated to web-site **122** through communications device **114**.

[0020] Internet **104** may take the form of any computer network that allows for the communication of information between computing device **102** and server **106**. Server **106** includes memory **118**, a processor **120** and a web-site **122**. Computing device **102** includes communication device **114**. Communication device **114** is in communication with server **106** through Internet **104**. The specific psychological mood state assigned to the sensed biometric information by mood interpretive module **125** is communicated to communication device **114**. Communication device **114** then communicates the assigned psychological mood state to server **106** across Internet **104**. The communication device **114** uploads the psychological mood state to web-site **122**.

[0021] Web-site **122** is a social networking web-site such as Facebook.com, Myspace.com, or other social networking site. These social networking sites include user-member pages that provide personal information about the user-member. An exemplary screen shot of such a user-member webpage **126** is shown in FIG. **3**. One of the typical features of these social networking sites is for user-members to post their psychological mood state. At present, user-members manually select their psychological mood states directly on web-site **122** from a drop down menu. By using bio-sensors **108** and **116** together with mood interpretive module **125**, the present invention allows for computing device **102** to accurately determine a user-member's mood directly from sensed biometric information taken from the user-member.

[0022] FIG. **2** illustrates a flow chart depicting a process for sensing and communicating a user's mood. The process begins with START **1000**. In step **1002**, biometric information of a user is sensed using biometric sensors **108** or **116**. In step **1004**, mood interpretive module **125** assigns a psychological mood state to the biometric information sensed with biometric sensors **108** or **116** by correlating the measured information with baseline information in order to pick the correct mood. In step **1006**, mood interpretive module **125** communicates the assigned psychological mood state to communication device **114**, which then communicates the assigned psychological mood state to web-site **122** across Internet **104**. In step **1008**, the psychological mood state is published on social networking web-site **122**, as shown in FIG. **3**. The process then ENDS in step **1010**.

[0023] FIG. **3** illustrates a screen shot from a graphical user interface depicting a web-site screen **126** of a user-member profile from a social networking site. Screen **126** includes a

menu bar **128** providing an "X" to allow a user to exit the screen **126**, a "-" **129** to allow a user to minimize the screen **126**, and a pair of overlapping squares **127** allowing a user to alter the size of screen **126**. Screen **126** further includes a web address **130**, which in this case points to a user-member webpage at the Facebook.com web-site **122**. Screen **126** shows the user-member's name and picture **136**, a posted blog **132** by the user-member, and a listing of interests **134**. In section **138**, the psychological mood state of the user-member is shown. In this example, the user-member indicates that his psychological mood state is "inventive," as shown by text **142**. This psychological mood state text indicator **142** is accompanied by an icon **140** signifying the inventive mood state, as illustrated by a smiley face having a light bulb hovering over head.

[0024] FIG. **4** illustrates a graphical representation **141** of a mood interpretive system **125** associating biometric information with psychological or emotional mood states. While FIG. **4** shows a graphical representation **141**, the information in graphical representation **141** could be alternately displayed in a matrix. In representation **141**, biometric information sensed by bio-sensors **108**, or **116** includes heart rate **144** and body temperature **150** as illustrated by data points **149** and **151**. Mood states **146** and **152** are respectively associated with heart rate **144** and body temperature **150** as correlated with data points **149** and **151**. Mood interpretive module **125** includes a baseline model of biometric information that is associated with mood states, as illustrated by temperature and heart baselines **148** and **154**. While shown using baselines, mood interpretive module **125** may include any baseline model to support mood interpretive module **125** in making initial determinations as to associating emotional states with sensed biometric information. Mood interpretive module **125** utilizes graphical representation **141** to associate sensed biometric information, illustrated by data points **149** and **151**, with mood states **146** and **152** with the aid of temperature and heart baselines **148** and **154**. The psychological mood state **146** and **152** assigned to the sensed biometric mood state by mood interpretive system **125** is then transferred to communication device **114** for communication to server **106**. Note that mood interpretive module **125**, while illustrated as a part of computing device **102**, may alternately be a supported on server **106**. In a system where mood interpretive module **125** is supported on server **106**, communication device **114** would communicate the information detected by sensors **108** and **116** to server **106** for processing by mood interpretive module **125**.

[0025] FIG. **5** illustrates a flow chart depicting a process for associating biometric information with a specific psychological mood state. The process begins with START **2000**. In step **2002**, mood interpretive module **125** determines the number of biometric sensors **108** and **116** and the number of different biometric parameters measured by sensors **108** and **116**. In step **2004**, mood interpretive module **125** assigns a range of psychological mood states (i.e. happy-bored-angry-sad) to each different biometric parameter (i.e. heart rate, body temperature, etc.). In step **2006**, mood interpretive module **125** generates a matrix utilizing each biometric sensor parameter as a column and each assigned range of psychological mood states as a row. In step **2008**, computer device **102** utilizes bio-sensors **108** and **116** to take biometric measurements of the user-member. In step **2010**, mood interpretive module **125** utilizes the sensed biometric information together with the matrix generated in step **2006** to assign a specific psychological mood state to the sensed biometric information. The process ENDS in step **2012**. The specific psychological mood state assigned in the process of FIG. **5** is then communicated to server **106** as shown in FIG. **2** in steps **1006** and **1008**.

[0026] FIG. **6** illustrates a flow chart depicting an alternate process for associating biometric information with a specific psychological mood state. The process begins with step **3000**. In step **3002**, mood interpretive module **125** determines the number of biometric sensors **108** and **116** and the number of different biometric parameters measured by sensors **108** and **116**. In step **3004**, mood interpretive module **125** assigns a range of psychological mood states (i.e. happy-bored-angry-sad) to each different biometric parameter (i.e. heart rate, body temperature, etc.). In step **3006**, mood interpretive module **125** ranks the biometric sensor parameters and psychological mood states in an order. For example, mood interpretive module **125** may assign body temperature as designating a person's primary mood, such as happy, angry, or sad. Mood interpretive module **125** may then designate heart rate as a secondary mood indicator designating the type of primary mood that they are in. For example, if the user-member is happy, a slow heart rate may show that they are happily-relaxed, a fast heart rate may show that they are happily-excited. Alternatively, if the user-member is sad as indicated by their primary biometric parameter, body temperature in this example, a slow heart rate may indicate that they are sad and brooding, while a fast heart rate may show that they are sad and panicking Mood interpretive system **125** may access additional bio-sensor readings to provide tertiary, etc. refinements to determining the user-member's specific mood state. In step **3008**, computer device **102** takes biometric measurements with bio-sensors **108** and **116**. In step **3010**, mood interpretive module **125** determined the psychological mood state from the sensed biometric information using the rankings generated in step **3006**. In step **3012**, the process ENDS. The specific psychological mood state assigned in the process of FIG. **6** is then communicated to server **106** as shown in FIG. **2** in steps **1006** and **1008**.

[0027] While the preferred embodiments of the present invention have been illustrated in detail, it should be apparent that modifications and adaptations to those embodiments may occur to one skilled in the art without departing from the scope of the present invention as set forth in the following claims.

I claim:

1. A mood sensing and communicating system, comprising:

a biometric sensor configured to sense biometric information from a person;

a computing device;

a mood interpretive module supported on the computing device, the mood interpretive system being in communication with the biometric sensor, the mood interpretive system configured to assign an emotional mood state to the sensed biometric information; and

a communication system supported on the computing device, the communication system configured to communicate the assigned emotional mood state across an Internet to a web site for positing on a web page.

2. The system of claim **1**, wherein the sensed biometric information is selected from the group consisting of heart rate, body temperature, blood oxygen level, vocal signature, and skin moisture.

3. The system of claim 1, wherein the emotional mood state is selected from the group consisting of happy, sad, relaxed, angry, stressed, tired and excited.

4. The system of claim 1, wherein the computing device is a cellular phone, wherein the biometric sensor is contained within a casing forming the cellular phone.

5. The system of claim 4, wherein the biometric sensor comprises a microphone, wherein the sensed biometric information is a vocal signature.

6. The system of claim 1, further comprising a mood corrective system, said mood corrective system being configured to enable a user to manually adjust the emotional mood states selected by the mood interpretive system in response to the sensed biometric information.

7. The system of claim 1, wherein the biometric sensor comprises a USB enabled device in communication with the computing device.

8. The system of claim 1, wherein the biometric sensor comprises a mouse.

9. The system of claim 1, wherein the mood interpretive system comprises a database having a plurality of emotional mood states assigned with ranges of sensed biometric information.

10. The system of claim 6, wherein the mood interpretive system includes a neural network that assigns emotional mood states to sensed biometric information of a specific user.

11. A method for sensing and communicating a user's mood, comprising:

sensing biometric information from a user with a biometric sensor;

associating an emotional mood state with the sensed biometric information with a mood interpretive module; and

communicating the assigned emotional mood state to a web-site supported on a server across an Internet.

12. The method of claim 11, wherein the biometric information is selected from the group consisting of heart rate, body temperature, blood oxygen level, vocal signature, and skin moisture.

13. The method of claim 11, wherein the emotional mood state is selected from the group consisting of happy, sad, relaxed, angry, stressed, tired and excited.

14. The method of claim 11, wherein the biometric sensor is a microphone of a cellular device.

15. The method of claim 14, wherein the biometric sensor is a USB capable device.

16. A method for sensing and communicating a user's mood, comprising:

sensing a vocal signature of a user with a microphone;

associating a psychological mood state with the sensed vocal signature;

storing the assigned psychological mood state in a memory; and

communicating the assigned psychological mood state across a network to a web-site supported on a server.

17. The method of claim 16, wherein the vocal signature is sensed during a telephone call.

18. The method of claim 16, wherein the assigned psychological mood state is periodically determined and communicated to the web-site.

19. The method of claim 16, further comprising manually associating ranges of sensed biometric information with psychological mood states with a touch-screen graphical user interface.

20. The method of claim 16, further comprising:

detecting a range of biometric information from a specific user; and

assigning psychological mood states to the range of biometric information using a neural network.

* * * * *

专利名称(译)	用于从感测到的生物信息中解释用户心理状态并将该状态传达给社交网站的系统和方法		
公开(公告)号	US20110124977A1	公开(公告)日	2011-05-26
申请号	US12/623414	申请日	2009-11-21
[标]申请(专利权)人(译)	WINARSKI TYSON YORK		
申请(专利权)人(译)	WINARSKI TYSON YORK		
当前申请(专利权)人(译)	WINARSKI TYSON YORK		
[标]发明人	WINARSKI TYSON YORK		
发明人	WINARSKI, TYSON YORK		
IPC分类号	A61B5/00		
CPC分类号	A61B5/16 A61B5/165 A61B2560/0271 G06F19/3443 G06F3/015 A61B5/145 A61B5/1455 G06F2203/011 A61B5/0531 A61B5/024 A61B5/01 G06F3/011 G16H50/70		
其他公开文献	US8666672		
外部链接	Espacenet USPTO		

摘要(译)

本发明是一种情绪感测和通信系统和方法，其包括配置成感测来自人的生物测定信息的生物测定传感器。在计算设备或远程服务器上支持情绪解释系统。情绪解释系统与生物测定传感器通信，并且被配置为用感测的生物测定信息分配心理或情绪情绪状态。在计算设备上支持通信系统，并且该通信系统被配置为将所分配的心理情绪状态通过因特网传送到网站，用于在网页上定位。该方法包括用生物传感器感测来自用户的生物测定信息，用心情解释模块将心理情绪状态与感测的生物测定信息相关联，以及将所分配的心理情绪状态通过因特网传送到服务器上支持的网站。