Galgotias Patent - 576421	**Samsung Prior Art - US20170115755A1**
1. An IOT based writing pen	The electronic device of claim 2, wherein the electronic device comprises at least one accessory device for the external electronic device including **a stylus pen.**
for monitoring the health parameters	According to an embodiment of the present disclosure, the electronic device 500 (e.g., the processor 570) uses sensing information (e.g., biometric information) obtained in the external electronic **device 600 (e.g., the stylus pen 410), and determines the disease of a user or some condition, malady or other information that indicates that health treatment or care should be implemented.**
comprises different types of sensors (101)	According to various embodiments of the present disclosure, sensing information (e.g., biometric information) of a user, which is associated with an application that is currently executed in an electronic device, may be obtained **using an external electronic device (e.g., a stylus pen) that is equipped with a plurality of sensors, and the obtained biometric information may be provided.**
microcontroller (102), WIFI (103), Power source (104), memory (105), mobile application (106), enclosure (107), alert system (108), Cloud platform (109), Display (110),	For example, a plurality of components 1814, 1815, 1816, 1817, 1818, 1819, 1820, 1821, and 1823 may be sequentially disposed in the **housing 1810 of the stylus pen 410.** For example, the component 1814 out of the components disposed in the housing 1810 may be an acceleration sensor and a gyro sensor. For example, the component 1815 may be a **battery**. For example, the component 1816 may be the **memory** 650. For example, the component 1817 may be the **processor** 660. For example, the component 1818 may be a gas sensor. For example, the components 1819 to 1821 may be electrodes # 1 and #2 of the ECR monitor sensor and a

	heart rate monitor sensor, respectively. For example, the component 1822 may be a sensor for electric impedance of the skin. For example, the component 1823 may be an EMR. According to various embodiments of the present disclosure, the disposition of the components 1813 to 1818 may be modified. **The display unit (e.g., the display unit 640) may be formed outside the housing 1810 of the stylus pen 410.** Referring to FIG. 17, the electronic device 600 (e.g., the electronic device 101 or 201, or the stylus pen 410) may include: the communication unit 610 (e.g., the communication interface 170, the communication module 220, and the interface 270); The electronic device 400 may execute wired communication or wireless communication (e.g., short-range wireless communication), such as Bluetooth, Near Field Communication (NFC), or Infrared Ray (IR), **WiFi**, **or the like, with the stylus pen 410** Referring to FIGS. 14 and 15, the electronic device 500 (e.g., the processor 570) provides sensing information (e.g., biometric information) received from the external electronic device 600 (e.g., the stylus pen 410) to an **external device (e.g., an external server that utilizes user authentication)** in operation 1401 The device management application, for example, can install, delete, or update a function (e.g., turn-on/turn off of the external electronic device itself (or some components) or display brightness (or resolution) adjustment) of an external electronic device communicating with the electronic device, **or an application operating in the external**

	electronic device. According to an embodiment of the present disclosure, **the memory 650 may store operating programs of the electronic device 600 (e.g., the stylus pen 410).**
wherein a plurality of sensors (101) is integrated into the pen to monitor different health parameters, such health monitor sensor, temperature sensor, accelerometer, blood oxygen level sensor, pressure sensor,	According to various embodiments of the present disclosure, the communication unit 610, the sensor unit 620, the input unit 630, the display unit 640, the memory 650, or the processor 660 may be included in the single external electronic device 600 or a plurality of different external electronic devices. According to an embodiment of the present disclosure, referring to Table 1, the sensor unit 620 may be a **heart rate monitor sensor.** The heart rate monitor sensor may obtain a heart rate, a breathing rate, a heart rate variability, or a **blood oxygen saturation.** The sensor unit 620 may include at least one sensor from among the sensors listed in Table 1 as provided below. Each sensor may obtain sensing information as shown in Table 1. Various types of services may be provided to a user using each piece of sensing information. The sensor unit 620 may further include an **acceleration** sensor, a gyro sensor, or a **pressure** sensor, and the like. According to an embodiment of the present disclosure, referring to Table 1, the sensor unit 620 may be a **thermometer**.
and transfer to the microprocessor (102), where it serves as the brain of the pen, managing data collection from the sensors, processing the data, and controlling other components of the device	When the sensor unit 620 is detached from the other electronic device (e.g., the electronic device 500), **the sensor unit 620 may be activated under the control of the processor 660.** The sensor unit 620 may activate a sensor associated with an application, based on information associated with the application that is received from the other electronic device (e.g., the electronic device 500) through the communication unit 610. **The**

	sensor unit 620 may transfer the sensing information to the processor 660. According to an embodiment of the present disclosure, the input unit 630 may generate input data corresponding to a user input of the external electronic device 600 (e.g., the stylus pen 410). The input unit 630 may include at least one input means. The input unit 630 may include, for example, a physical button or the like. **According to an embodiment of the present disclosure, the input unit 630 may transfer a user input to the processor 660.** According to an embodiment of the present disclosure, **the display unit 640 may display a residual quantity of battery power under the control of the processor 660.** According to an embodiment of the present disclosure, **the processor 660 may transmit sensing information sensed by the external electronic device 600 (e.g., the stylus pen 410) to another electronic device (e.g., the electronic device 500) when a predetermined condition is satisfied.** **The vibration unit 670 may generate, under the control of the processor 660,** vibrations and may provide the vibrations to a user who holds the external electronic device 600 (e.g., the stylus pen 410).
wherein WIFI (103) is used for wireless connection to transmit data to external devices like smart phones or tablets and	**The processor 660 may transmit sensing information to the electronic device 500 through short-range wireless communication.** Referring to FIG. 4, an electronic device 400 (e.g., the electronic device 101 or the electronic device 201) according to the present disclosure may include a stylus pen 410 (e.g., the electronic device 101 or the electronic device 201). According to an

	embodiment of the present disclosure, the stylus pen 410 may be securable (e.g., installed or inserted) and detachment (e.g., removable, extractable) from a predetermined position on a lateral side of the electronic device 400. **The electronic device 400 may execute wired communication or wireless communication (e.g., short-range wireless communication), such as Bluetooth, Near Field Communication (NFC), or Infrared Ray (IR), WiFi, or the like, with the stylus pen 410.**
power source (104) provides the necessary energy to operate the pen and its components;	For example, a plurality of components 1814, **1815, 1816, 1817, 1818, 1819, 1820, 1821, and 1823 may be sequentially disposed in the housing 1810 of the stylus pen 410**. For example, the component 1814 out of the components disposed in the housing 1810 may be an acceleration sensor and a gyro sensor. **For example, the component 1815 may be a battery.** Although not illustrated, according to an embodiment of the present disclosure, **the external electronic device 600 (e.g., the stylus pen 410) may include a ground for charging a battery.** For example, **the external electronic device 600 (e.g., the stylus pen 410) may include two grounds for power and ground (GND), for charging a battery.**
memory (105) temporarily stores health data, before it is transmitted to external devices	According to an embodiment of the present disclosure, the electronic device 500 (e.g., the processor 570) **uses sensing information (e.g., biometric information) obtained in the external electronic device 600 (e.g., the stylus pen 410), to identify a user.** **According to an embodiment of the present disclosure, the memory 650 may store operating programs of the electronic device 600 (e.g., the stylus pen 410).** The memory 650 may store information associated with the

	external electronic device 600 (e.g., the stylus pen 410), such as a manufacturer, a manufacturing date, **identification information, or the like.**
wherein mobile application (106) works as an interface for user to view and analyze their health data	The application 370 can include **a specified application (e.g., a health care application of a mobile medical device) according to a property of the external electronic device.** The application 370 can include an application received from an external electronic device. The application 370 can include an information exchange application for supporting information exchange between the electronic device and an external electronic. An electronic device (e.g., the external electronic device 600 or the stylus pen 410), according to an embodiment of the present disclosure, may include: a first sensor for obtaining first data, a second sensor for obtaining second data, **a communication interface (e.g., the communication unit 610),** and a processor (e.g., the processor 660).
and the enclosure (107) used for internal components, providing protection and durability	For example, a plurality of components 1814, 1815, 1816, 1817, 1818, 1819, 1820, 1821, and 1823 may be sequentially **disposed in the housing 1810 of the stylus pen 410**.
wherein alert system (108) generates alert or notification in response to abnormal health reading and prompt the user to take appropriate action, such as seeking medical attention or adjusting their activity level;	**When the sensing information (e.g., stress measurement value) is out of the designated range (e.g., when the sensing information is less than a threshold value) in operation 1203, the electronic device 500 (e.g., the processor 570) performs a corresponding function.** The corresponding function may be a **function that corresponds to an input from the external electronic device 600 (e.g., the stylus pen 410).** **In operation 1205, the electronic device**

	(e.g., the processor 570) displays a notification associated with whether to utilize or enable a service addressing a malady indicating by the sensing information (e.g., a color therapy service). For example, the electronic device 500 (e.g., the processor 570) may display a message 1310 facilitating selection/activation of a color therapy service in a display unit (e.g., the display unit 550), as illustrated in FIG. 13A.
wherein Cloud platform (109) secures the user data	Referring to FIGS. 14 and 15**, the electronic device 500 (e.g., the processor 570) provides sensing information (e.g., biometric information) received from the external electronic device 600 (e.g., the stylus pen 410) to an external device (e.g., an external server that utilizes user authentication) in operation 1401.** In operation 1403, the electronic device 500 (e.g., the processor 570) determines whether authentication based on the sensing information (e.g., biometric information) is successful. If authentication is unsuccessful in operation 1403, the electronic device 500 performs operation 1407 when user authentication fails based on the provided sensing information (e.g., biometric information).
robust encryption protocols and authentication mechanisms are implemented both within the pen and the companion application;	For example, in the case that utilizes security or authentication, such as financial transaction, web login, and the like, **the electronic device 500 (e.g., the processor 570) may perform user authentication using a signature and biometric information of a user.** According to an embodiment of the present disclosure, the electronic device 500 (e.g., the processor 570) may identify a user based on sensing information (e.g., biometric information), and provides a personalized UI based on a result of identification. When a plurality of inputs are provided to the electronic device 500

	through a plurality of external electronic devices 600 (e.g., the stylus pen 410), the electronic device 500 (e.g., the processor 570) may identify a user based on biometric information, and may simultaneously process the plurality of inputs of the plurality of external electronic devices 600 (e.g., the stylus pen 410).
and Display (110) provides feedback to the user about their health status or the pen's connectivity status.	According to an embodiment of the present disclosure, the **display unit 640 may display the state of an external electronic device (e.g., the stylus pen 410), including a battery charging state, a sensing state, or whether communication with another electronic device (e.g., the electronic device 500) is executed.** For example, **the display unit 640 may display sensing information obtained by the external electronic device (e.g., the stylus pen 410).**