

DESCRIPTION

TITLE OF INVENTION: [A METHOD AND SYSTEM FOR CONNECTING AN ELECTRONIC APPARATUS WITH A MOBILE DEVICE]

TECHNICAL FIELD

[0001] The present disclosure relates generally to the field of communication management technologies, focusing specifically on connecting and operating electronic apparatuses, such as massagers, with mobile devices.

BACKGROUND

[0002] The following discussion of the background to the invention is intended to facilitate an understanding of the present invention only. It should be appreciated that the discussion is not an acknowledgement or admission that any of the material referred to was published, known or part of the common general knowledge of the person skilled in the art in any jurisdiction as at the priority date of the invention.

[0003] In the field of personal wellness and relaxation, the popularity of wellness devices, particularly massagers, has surged, reflecting a variety of designs each tailored to specific body parts. These range from specialized massagers for the neck, hand, back, waist, legs, and feet, to multi-functional devices like massage chair (also known as massage sofa, massage couch) that simultaneously target multiple areas. In some cases, these massagers are controlled by portable electronic device (also known as mobile device) such as smartphones and tablets through dedicated applications. Users need to connect the massagers to their mobile device, which includes a mobile app displaying the connected massagers. This setup enhances ease of use and control, making it convenient for individuals in modern society to manage massagers.

[0004] However, connecting massagers to mobile devices, including both initial connections and future reconnections, can be challenging for certain user groups, particularly senior citizens. Although seniors are a significant user group for massagers, they may struggle with the increasingly sophisticated smartphones and their mobile apps. For example, as illustrated in Fig 4a, the process of connecting an electronic massager to a smartphone involves locating two scannable codes (e.g., QR code stickers) on the front of the massager: one QR code for product information (e.g.,

Product Serial Number) (i.e., the Product Code) and another for wireless connection (e.g., Near Field Communication, NFC) (i.e., the connection code). Users might find it confusing to see two scannable codes, and seniors, in particular, might find it difficult to identify the correct one to scan or tap in the appropriate step. Additionally, having two codes prominently displayed on the electronic massager can affect its appearance.

[0005] Particularly for first-time massager registration and pairing, users often are required to complete multiple steps to establish a proper connection between the electronic portable apparatus and the massager. In some instances, as illustrated in Fig 5, the users first need to turn on or wake up the product (e.g., massage chair) to initiate its Bluetooth broadcasting (S301). Next, users are required to launch the mobile app on their mobile device (S302), navigate to the product listing page (S303), and scan the product code with their mobile device to obtain product information (e.g., the product serial number of the massage chair) (S304) and accordingly register it (S305). The user is then required to tap the massager chair appearing in the mobile app to pair the mobile device with the already broadcasting Bluetooth (S306) of the massage chair. Prior to connecting with the Bluetooth, the mobile device initiates the process of downloading the relevant assets (e.g., massage program, music, image and video) related to the specific massage chair locally(S307). After the assets are fully downloaded, all available massage chairs open for pairing appear in the mobile app for the user to select. Once the user selects the “ready” massage chair (S308) appearing in the mobile app, it is automatically connected (S309) and ready for use. In the above procedure, many steps require user actions, such as steps S301, S302, S303, S304, S306 and S308, which can be cumbersome and inconvenient, because, for example, an incorrect operation in any of the above user-action-related steps could result in a failed connection and registration of the massager with the mobile device, frustrating the users. Furthermore, as the size of product assets continues to increase, the time required to download these assets may exceed the Bluetooth broadcasting duration. Consequently, there might be instances where the Bluetooth has already stopped broadcasting and becomes unconnectable by the time the asset download is complete. This situation would necessitate reactivating the Bluetooth device, a step that could confuse and frustrate some users.

[0006] Even for reconnection of a previously registered massage chair, several user actions are still required, and accordingly inconvenient for users. For example, the user

might need to turn on or wake up the massage chair to initiate Bluetooth broadcasting first, launch the app, navigate to the product listing page, and tap the mobile device on the connection code of the massage chair to re-establish the connection, allowing the user to operate the massage chair using the mobile device.

[0007] The inconvenience becomes even greater when users need to operate a massage program involving multiple massagers, such as one that synchronizes the operations of specialized head, back, and leg massagers or multiple identical massagers. Following the conventional procedure to connect and register each massage device to the mobile device requires numerous steps, making it particularly challenging for senior users.

[0008] Thus, there exists a need to develop a method that allows for the efficient and convenient connection of massage devices to mobile devices, involving fewer user actions and alleviating at least one of the aforementioned problems.

SUMMARY

[0009] Specifically, to address the above-mentioned technical problems, the present invention specifically uses the following technical solutions:

[0010] Accordingly, in accordance with one aspect of the present invention, there is provided a method for connecting an electronic apparatus (101) with a mobile device (102), wherein the electronic apparatus (101) comprises a first communication unit (103), and a second communication unit (104); wherein the second communication unit (104) comprises a first information (201) and a second information (202); wherein the first information (201) is associated with the first communication unit (103), and the second information (202) is associated with the electronic apparatus (101); wherein the first communication unit (103) also comprises the first information (201); wherein the method comprises the following steps:

[0011] S101 connecting the mobile device (102) and the second communication unit (104); S102 transmitting, from the second communication unit (104), the first information (201) and the second information (202) to the mobile device (102); S103a searching for the first communication unit (103), by the mobile device (102), based on the first information (201); S103b if the first communication unit (103) is discovered, connecting

the mobile device (102) and the first communication unit (103); and, S104 registering the electronic apparatus (101) with the mobile device (102) based on the second information).

[0012] In some embodiments, the first communication unit (103) also comprises the second information (202).

[0013] In some embodiments, the second communication unit (104) is a Near Field Communication Chip.

[0014] In some embodiments, the method further comprises: after the step of S101 and before the step of S103, activating, by the Near Field Communication Chip, the first communication unit (103).

[0015] In some embodiments, the second communication unit (104) is a scannable barcode. In some embodiments, the scannable barcode is a linear barcode. In some embodiments, the scannable barcode is a matrix barcode.

[0016] In some embodiments, the method further comprises: before the step of S103, activating the first communication unit (103).

[0017] In some embodiments, the method further comprises: downloading, by the mobile device (102), a corresponding electronic apparatus asset from a network source (105) based on the second information (202).

[0018] In some embodiments, the electronic apparatus (101) is a massage apparatus. In some embodiments, the massage apparatus is a head massager, a neck massager, a back massager, a leg massager, a foot massager or a multiple-function massager. In some embodiments, the multiple-function massager is a massage chair, a massage sofa or a massage couch.

[0019] In some embodiments, the second communication unit (104) is positioned at backside of the massage apparatus.

[0020] In some embodiments, the corresponding electronic apparatus asset comprises a massage program.

[0021] In some embodiments, the first communication unit (103) is operable to

communicate based on a short-range wireless technology. In some embodiments, the short-range wireless technology is Bluetooth, Zigbee, Z-Wave or Wi-Fi.

[0022] In some embodiments, the mobile device (102) is a smartphone, a tablet, a personal digital assistant or a smartwatch.

[0023] In some embodiments, the first information (201) comprises an identification information of the first communication unit (103).

[0024] In some embodiments, the second information (202) comprises a serial number of the electronic apparatus (101).

[0025] In accordance with another aspect of the present invention, there is provided a system for connecting an electronic apparatus (101) with a mobile device (102), wherein the electronic apparatus (101) comprises a first communication unit (103), and a second communication unit (104); wherein the second communication unit (104) comprises a first information (201) and a second information (202); wherein the first information (201) is associated with the first communication unit (103), and the second information (202) is associated with the electronic apparatus (101); wherein the first communication unit (103) comprises the first information (201); wherein the mobile device (102) and the second communication unit (104) are operable to be connected, and the first information (201) and the second information (202) are operable to be transmitted from the second communication unit (104) to the mobile device (102); wherein the mobile device (102) is operable to search for and connect with the first communication unit (103) based on the first information (201); and, wherein, if the first communication unit (103) is discovered by and connected with the mobile device (102), the mobile device (102) is operable to register the electronic apparatus (101) based on the second information (202).

[0026] In some embodiments, the first communication unit (103) comprises the second information (202).

[0027] In some embodiments, the second communication unit (104) is a Near Field Communication Chip or a scannable barcode.

[0028] In some embodiments, the electronic apparatus (101) is a massage apparatus; wherein the massage apparatus is optionally a head massager, a neck

massager, a back massager, a leg massager, a foot massager or a multiple-function massager.

[0029] In some embodiments, the first communication unit (103) is operable to communicate based on a short-range wireless technology; wherein the short-range wireless technology is optionally Bluetooth, Zigbee, Z-Wave or Wi-Fi.

[0030] In some embodiments, the mobile device (102) is a smartphone, a tablet, a personal digital assistant or a smartwatch.

[0031] In accordance with another aspect of the present invention, there is provided a method for connecting an electronic apparatus (101) with a mobile device (102), wherein the electronic apparatus (101) comprises a first communication unit (103), and the first communication unit (103) comprises both a first information (201) and a second information (202); wherein the first information (201) is associated with the first communication unit (103), and the second information (202) is associated with the electronic apparatus (101); wherein the method comprises the following steps: S201 searching, by the mobile device (102), for the first communication unit (103); S202 selecting the first communication unit (103) on the mobile device (102) based on the first information (201); S203 connecting the first communication unit (103) and the mobile device (102); S204 receiving, by the mobile device (102), the second information (202) from the first communication unit (103); S205 registering the electronic apparatus (101) with the mobile device (102) based on the second information (202) received by the mobile device (102).

[0032] In some embodiments, the method further comprises S206, downloading, by the mobile device (102), a corresponding electronic apparatus asset from a network source (105) based on the second information (202).

[0033] In some embodiments, the electronic apparatus (101) is a massage apparatus; wherein the massage apparatus is optionally a head massager, a neck massager, a back massager, a leg massager, a foot massager or a multiple-function massager.

[0034] In some embodiments, the first communication unit (103) is operable to communicate based on a short-range wireless technology; wherein the short-range

wireless technology is optionally Bluetooth, Zigbee, Z-Wave or Wi-Fi.

[0035] In some embodiments, the mobile device (102) is a smartphone, a tablet, a personal digital assistant or a smartwatch.

[0036] In accordance with another aspect of the present invention, there is provided a method for operating a first group of massage apparatuses (106) using a mobile device (102), wherein the massage apparatus (106) comprises a first communication unit (103) operable to establish connection with the mobile device (102); wherein the method comprises the following steps of: S401 operating the mobile device (102) to connect with a plurality of the massage apparatuses (106) through the first communication unit (103); S402 selecting the first group of massage apparatuses (106) from the plurality of the massage apparatuses (106) connected with the mobile device (102); S403 selecting a massage program applicable to the first group of massage apparatuses (106); S404 operating the mobile device (102) to initiate the massage program (107), wherein the massage program (107) instructs the first group of massage apparatuses (106) to perform a massage operation.

[0037] In some embodiments, the method according to Claim 1, further comprising: before the step of S404, the each of the first group of massage apparatuses (106) is activated to assess whether the each of the first group of massage apparatuses (106) is in a predetermined position relative to a user, wherein the predetermined position is required for the each of the first group of massage apparatuses (106) to perform the massage operation.

[0038] In some embodiments, the each of the first group of massage apparatuses (106) is operable to detect neck position and/or shoulder position of the user for assessing whether the each of the first group of massage apparatuses (106) is in the predetermined position.

[0039] In some embodiments, the step of S204 is initiated after it is determined that all of the first group of massage apparatuses (106) are in the predetermined positions.

[0040] In some embodiments, the first group of massage apparatuses (106) comprises two or more identical massage apparatuses; wherein the massage program (107) instructs the two or more identical massage apparatuses to start performing the

massage operation simultaneously after the two or more identical massage apparatuses are detected to be in the predetermined positions.

[0041] In some embodiments, the two or more identical massage apparatuses are massage chairs, massage sofas or massage couches. In some embodiments, the plurality of massage apparatuses (106) comprises two or more of a head massager, a neck massager, a back massager, a leg massager, a foot massager and a multiple-function massager. In some embodiments, the multiple-function massager is a massage chair, a massage sofa or a massage couch.

[0042] In some embodiments, the mobile device (102) is a smartphone, a tablet, a personal digital assistant or a smartwatch.

[0043] In some embodiments, wherein the first communication unit (103) is operable to communicate based on a short-range wireless technology.

[0044] In some embodiments, the short-range wireless technology is Bluetooth, Zigbee, Z-Wave or Wi-Fi. In some embodiments, the massage program is downloaded from a network source based on product information of the first group of massage apparatuses (106).

[0045] In some embodiments, the method further comprises: before the step of S401, recommending a plurality of preset massage programs, wherein each of the plurality of preset massage programs indicates a second group of massage apparatuses.

[0046] In some embodiments, the each of the plurality of massage apparatuses (106) comprises a second communication unit (104); wherein the second communication unit (104) comprises a first information (201) and a second information (202); wherein the first information (201) is associated with the first communication unit (103), and the second information (202) is associated with the each of the plurality of massage apparatuses (106).

[0047] In some embodiments, the first communication unit (103) comprises the second information (202).

[0048] In some embodiments, the method further comprises the following steps: S101 connecting the mobile device (102) and the second communication unit (104);

S102 transmitting, by the second communication unit (104), the first information (201) and the second information (202) to the mobile device (102); S103a searching for the first communication unit (103), by the mobile device (102), based on the first information (201); S103b if the first communication unit (103) is discovered, connecting the mobile device (102) and the first communication unit (103); and, S104 registering the electronic apparatus (101) with the mobile device (102) based on the second information).

[0049] In some embodiments, the second communication unit (104) is a Near Field Communication Chip.

[0050] In some embodiments, the method further comprises: after the step of S101 and before the step of S103, activating, by the Near Field Communication Chip, the first communication unit (103).

[0051] In some embodiments, the second communication unit is a scannable barcode. In some embodiments, the scannable barcode is a linear barcode or a matrix barcode.

[0052] In some embodiments, the method further comprises: before the step of S103, activating the first communication unit (103).

[0053] In some embodiments, the method further comprises: after the step of S104, registering the second information (202) with the mobile device (102).

[0054] In some embodiments, the method further comprises: downloading, by the mobile device (102), a corresponding message apparatus asset from a network source (105) based on the second information (202).

[0055] In some embodiments, the first information (201) comprises an identification information of the first communication unit (103).

[0056] In some embodiments, the second information (202) comprises a serial number of the each of the plurality of message apparatuses (106).

[0057] Other aspects and features of the present invention will become apparent to those of ordinary skill in the art upon review of the following description of specific embodiments of the invention in conjunction with the accompanying figures.

BRIEF DESCRIPTION OF THE DRAWINGS

[0058] In the figures, which illustrate, by way of non-limiting examples only, embodiments of the present invention,

[0059] [Fig. 1a]: illustrates, in a block diagram, a system for connecting an electronic apparatus with a mobile device according to various embodiments of the present invention.

[0060] [Fig. 1b]: illustrates, in a block diagram, another system for connecting an electronic apparatus with a mobile device according to various embodiments of the present invention.

[0061] [Fig. 2a]: illustrates, in a flowchart, a method for connecting an electronic apparatus with a mobile device according to various embodiments of the present invention.

[0062] [Fig. 2b]: illustrates, in a flowchart, another method for connecting an electronic apparatus with a mobile device according to various embodiments of the present invention.

[0063] [Fig. 3]: illustrates, in a block diagram, a system for operating a massage program using a mobile device, wherein the massage program involves multiple massage devices, according to various embodiments of the present invention.

[0064] [Fig. 4a]: illustrates a conventional massage chair comprising two or more scannable codes.

[0065] [Fig. 4b]: illustrates a massage chair utilizing the present invention, comprising only one scannable code, according to various embodiments of the present invention.

[0066] [Fig. 5]: illustrates, in a flowchart, a conventional method for connecting an electronic apparatus with a mobile device.

[0067] [Fig. 6a]: illustrates, in a flowchart, a method for operating a plurality of massage apparatuses.

[0068] [Fig. 6b]: illustrates, in a flowchart, a method for operating a massage

program.

[0069] [Fig. 7a]: shows a series of user interfaces on a mobile device, displaying the connecting, registering, and ready-for-use statuses using the method of the present invention for connecting a massage chair to a mobile device, according to various embodiments of the present invention.

[0070] [Fig. 7b]: shows a series of user interfaces on a mobile device, displaying the reconnection of a previously already registered massage apparatus.

[0071] [Fig. 8]: shows the user interfaces on a mobile device, displaying the selection of a massage program dedicated to neck and shoulder treatment, according to various embodiments of the present invention.

[0072] [Fig. 9]: shows the user interfaces on a mobile device, displaying the process of auto-shoulder detection, according to various embodiments of the present invention.

[0073] [Fig. 10]: shows the user interfaces on a mobile device, displaying the operation of the massage programs depending on the results of the auto-shoulder detection, according to various embodiments of the present invention.

DETAILED DESCRIPTION

[0074] Throughout this document, unless otherwise indicated to the contrary, the terms “comprising”, “consisting of”, “having” and the like, are to be construed as non-exhaustive, or in other words, as meaning “including, but not limited to”.

[0075] Furthermore, throughout the document, unless the context requires otherwise, the word “include” or variations such as “includes” or “including” will be understood to imply the inclusion of a stated integer or group of integers but not the exclusion of any other integer or group of integers.

[0076] Furthermore, throughout this document, unless the context indicates otherwise, the terms “massager”, “massage apparatus” or “massage device” refer to any electronic apparatus designed to manipulate both superficial and deeper layers of muscle and connective tissue using various techniques. These devices aim to enhance

function, aid in the healing process, reduce muscle reflex activity, inhibit motor-neuron excitability, and promote relaxation and well-being, as well as serve recreational purposes. Such massagers can be used on tissues including, but not limited to, muscles, tendons, ligaments, fascia, skin, joints, and other connective tissues, as well as lymphatic vessels, organs of the gastrointestinal system, hands, fingers, elbows, knees, legs, arms, and feet. Additionally, the massager or massage device, as defined here, includes electronic communication units that enable data communication with other portable electronic or mobile devices.

[0077] Furthermore, throughout this document, unless the context indicates otherwise, the terms “massage program” or “massage treatment program” refer to a software application that controls the operation of one or more massagers (e.g., For instance, during the execution of a massage program, various mechanical components of the massager, such as rollers, motors, and airbags, undergo movement and operational changes). This software commands the massagers to perform a series of preprogrammed operations, targeting both superficial and deeper layers of muscle and connective tissue using various techniques. The purpose of these operations is to alleviate discomfort, reduce muscle tension, enhance the healing process, and promote physical and mental relaxation and well-being. The massage program is designed to provide a treatment experience by controlling a single massage, or coordinating the actions of multiple massagers.

[0078] Unless defined otherwise, all other technical and scientific terms used herein have the same meaning as is commonly understood by a skilled person to which the subject matter herein belongs.

[0079] Embodiment (“Smart Connect”)

[0080] Referring to [Fig. 1] and [Fig. 2], according to various embodiments of the present invention, there is a method for connecting an electronic apparatus (101) with a mobile device (102); wherein the electronic apparatus (101) comprises a first communication unit (FCU) (103), and a second communication unit (SCU) (104); wherein the second communication unit (104) comprises a first information (201) and a second information (202); wherein the first information (201) is associated with the first communication unit (103), and the second information (202) is associated with the electronic apparatus (101); wherein the first communication unit (103) comprises the

first information (201).

[0081] In some embodiments, the electronic apparatus (101) is an electronic massager designed to provide automatic massage treatment to its user. The massager can be specialized for different areas of the body, including a head massager, neck massager, back massager, leg massager, or foot massager. It can also be a multifunctional massager, such as a massage chair, capable of targeting multiple areas simultaneously.

[0082] In some embodiments, the mobile device (102) is a portable electronic apparatus capable of communicating with the electronic massager through data transmission. Examples of such devices include smartphones, tablets, personal digital assistants, and smartwatches. This data communication capability allows the mobile device to control the operation of the massager and command it to perform a series of preprogrammed operations for massage treatment. Typically, the mobile device (102) interacts with one or more electronic massagers via a dedicated mobile app, which provides an intuitive interface, such as a dashboard, for the user to manage and control the massagers. This app allows users to easily select and customize massage programs, adjust settings, and monitor the status of the massagers in real-time. By leveraging the connectivity and computational power of the mobile device, the overall user experience is enhanced, offering seamless integration and control over the massage treatment process. However, to achieve control of one or more electronic massagers through a mobile device, the massagers must be correctly connected to the mobile device, and their information must be properly registered via the mobile app. This ensures seamless communication and synchronization between the devices, enabling the mobile device to effectively manage and control the massagers.

[0083] Accordingly, to achieve the proper connection and registration of the electronic massagers with the mobile device (102), the present invention adopts a unique design that incorporates two separate communication units within the electronic massager (101): the FCU (103) and the SCU (104). The FCU (103) of the electronic massager (101) is primarily responsible for transmitting data between the electronic massager (101) and the mobile device (102), enabling the mobile device (102) to control the electronic massager (101). Additionally, the FCU (103) is configured to include the identity information of itself, referred to as the first information (FI) (201). For

instance, if the FCU (103) is a Bluetooth device, the first information (201) might include the exact name of the Bluetooth device, formatted as "BT_Broadcast_Name".

[0084] In some embodiments, the FCU (103) is also configured to include the identity information of the specific electronic massager (101) it is installed in, referred to as the second information (SI) (202). For example, the second information (202) is the product serial number of the specific electronic massager (101), such as "Product_SN".

[0085] In some embodiments, besides utilizing Bluetooth, the FCU (103) is operable to communicate using other types of short-range wireless technologies such as Zigbee, Z-Wave, or Wi-Fi. These communication protocols are effective in conducting and maintaining fast data transmission within a short range, making them ideal for controlling electronic massagers with a user's mobile device, especially during the active running of a massage program by the electronic massage apparatus. This is particularly suitable since the user is likely to be in close proximity to these massagers (e.g., sitting in a massage chair while holding and operating the mobile device (102)).

[0086] The SCU (104) is primarily responsible for enabling the mobile device (102) to properly acquire the identity information of the specific electronic massager (101) (i.e., the second information (202)), such as the product serial number, as well as the identity information of the FCU (103) (i.e., the first information (201)). To achieve this, the SCU (104) is configured to include both the first information (201) of the FCU (103) (e.g., the name of the Bluetooth device) and the second information (202) of the specific electronic massager (101) (e.g., product serial number of the electronic massager).

[0087] It is evident to a skilled person that having a dual-communication unit configuration is technically advantageous in various ways. When the mobile device (102) initially acquires the first information (FI) and the second information (SI) from the SCU (104), it can later utilize the first information (e.g., Bluetooth name) to search for the intended FCU (103), and accordingly the correct electronic massager (101) which carries the intended FCU (103). This search method relies on the first information, thus, only the correct the FCU (103) with the correct first information (e.g., Bluetooth name) can be discovered and linked, accordingly allowing the correct electronic massager (101) to be properly registered with the mobile device (102) and for further operation.

[0088] In those embodiments where the FCU (103) also contains the second

information (202) (e.g., the product serial number), this setup allows the mobile device (102) to acquire the second information (202) directly from the FCU (103) (e.g., a smartphone acquiring the product serial number of the massager from its Bluetooth device). This arrangement can be technically advantageous in some circumstances, particularly if the SCU (104) fails to transmit the second information (202) to the mobile device (102), offering a “backup” option for the mobile device (102) to retrieve the product serial number. This “backup” of the second information can then be used for product registration and asset downloading. The SCU (104) might fail to transmit the second information (202) due to reasons such as (i) an error in capturing and recording the second information (202) during the manufacturing process, or (ii) corruption within the SCU (104) leading to the loss of the second information (202).

[0089] As illustrated in [Fig. 2], in actual operation, a user, when trying to register a new electronic massager (101) with their mobile phone (102), can perform the following steps to have the connection established:

[0090] S101 connecting the mobile device (102) and the SCU (104); and S102 transmitting, from the second communication unit (104), the first information (201) and the second information (202) to the mobile device (102). During these steps, the user establishes a connection between the mobile device (102) and the SCU (104) to transmit the relevant information stored in the SCU (104) to the mobile device (102).

[0091] In some embodiments, the SCU (104) is a Near Field Communication (NFC) chip, with both the first information (e.g., product serial number) and the second information (e.g., Bluetooth name) written into the NFC chip by, for example, flashing the information link into the NFC chip (such as: https://prod.services.osim-cloud.com.cn/launch_oneapp?productSN=xxxxxxx&btName=xxxxxxx). By simply placing the mobile device (102) in close proximity to the NFC chip, the user can establish a connection between the mobile device (102) and the NFC chip. This allows the NFC chip to transmit the first information (e.g., Bluetooth name or any other identification information of the FCU) and the second information (e.g., product serial number of the electronic massager) to the mobile device (102).

[0092] In some embodiments, the NFC chip is configured to activate the FCU (103) (e.g., Bluetooth), making it discoverable and connectable, so that, when the mobile device (102) taps the NFC chip, the NFC chip is programmed to send a signal that

triggers the linked Bluetooth device to start broadcasting. In some embodiments, once the Bluetooth device has been activated, the Bluetooth device is also programmed to send a signal to the mainboard of the massager, activating the massager. This configuration eliminates the need for manually activating the broadcasting of the FCU (103) (e.g., Bluetooth) prior to tapping the NFC chip, thereby simplifying the connection process for the user, who might, for example, forget to turn on the electronic massager to activate the broadcasting of the FCU (103). In addition to using the NFC chip to facilitate the autoactivation of the Bluetooth, other methods to automate the Bluetooth activation can also be employed to streamline the process. However, in embodiments lacking the autoactivation feature for the FCU (103), manual activation of the electronic massager or another activation method is still required to initiate the FCU (103), making it discoverable and connectable (e.g., Bluetooth broadcasting).

[0093] In some embodiments, the NFC chip includes both the product serial number of the massager and the Bluetooth name, whereas the Bluetooth device contains only the Bluetooth name. In some embodiments, the Bluetooth device also stores the product serial number of the massager. This setup provides a “backup” of the product serial number for product registration and asset downloading should the NFC chip somehow fail to accurately transmit the product serial number to the mobile device (e.g., a mobile phone).

[0094] In some embodiments, the SCU (104) is a scannable barcode, such as linear barcode (also known as one-dimensional barcode) and matrix barcode (also known as two-dimensional barcode). A common example of such scannable barcode is a QR code (quick-response code). In this case, the user can use the mobile device's camera to scan the QR code, thereby obtaining the first information (201) (e.g., Bluetooth name) and the second information (202) (e.g., product information such as the product serial number). For example, the QR code can be associated with a Uniform Resource Locator (URL) comprising the product serial number and the Bluetooth name (e.g., https://prod.services.osim-cloud.com.cn/launch_oneapp?productSN=xxxxxxx&btName=xxxxxxx).

[0095] After completing steps S101 and S102, the process advances to steps S103a and S103b. In step S103a, the mobile device (102) searches for the FCU (103) using the first information (201) (e.g., Bluetooth name). If the FCU (103) containing the first

information (201) is located, the mobile device (102) connects to the FCU (103) for data communication (S103b). Subsequently, the process moves to step S104, wherein the electronic apparatus (101), now connected, is registered with the mobile device (102) based on the second information (e.g., product serial number) (see [Fig. 7]). This registration is displayed, for example, in the product list interface of the mobile app running on the mobile device (102). It should be clear to a skilled person that the registration of the massager with the mobile device (102) follows typical product registration protocols common in this field. For instance, a specific massager can be registered through a mobile app on the mobile device (102) under a particular user account. Therefore, when the same user switches to a different mobile phone and logs into the mobile app using the same user account, they can access and control all massagers registered under that account. In other words, the massager is registered under the user account, not tied to a specific mobile device, in this embodiment.

[0096] These steps facilitate the efficient and correct connection between the mobile device (102) and the electronic massagers, particularly when multiple massage devices are positioned in close proximity (e.g., two connected massage chairs as shown in [Fig. 3]; an outlet or showroom wherein many massagers are displayed and in operation for patrons to experience). For instance, in the case of two closely situated massage chairs, the searching of the intended massage chair based on the first information (e.g., the Bluetooth name) could serve as a method to ensure accurate and efficient pairing between the intended massage chair and the mobile device. This simple but effective searching process helps prevent cross-connections and ensures that the mobile device pairs with the intended massager correctly. As a result, when the user selects a massage device displayed on the mobile app's product list interface, the correct electronic massager is accurately identified and linked in data communication. This enhances the user experience by providing reliable and straightforward connectivity, making it particularly user-friendly for senior users.

[0097] In other words, a search method based on the first information prevents the registration of any incorrect electronic massagers with the mobile device, enhancing the reliability and ease of product registration. This is achieved using a simple technical solution without requiring complex hardware or software implementations.

[0098] Once the correct electronic massager is successfully registered with the

mobile device (102), it can be easily reconnected with the mobile device (102) in future uses. For subsequent uses of the massage devices, once the FCU (103), such as a Bluetooth device, starts broadcasting and becomes discoverable and connectable, the user can simply select the already registered electronic massager from the product list page of the mobile app. The mobile device (102) and the specific massage device will then be connected automatically, and the specific massage device will enter into the "ready-to-use" status.

[0099] In some embodiments, the method of product connection and registration further includes the step of S105: downloading, by the mobile device (102), a corresponding electronic apparatus asset from a network source (105) based on the second information (202). For example, using the product serial number, the mobile app can automatically search for and locate the relevant product assets (e.g., massage programs, music and images specific to the newly registered massager) and download them from the network (e.g., a cloud server storing resources for the massager products) into the mobile device (102). Additionally, the search for the correct product assets might include additional information, such as the model of the mobile phone running the mobile app, ensuring that the product assets (e.g., massage programs) specifically tailored for the particular type and model of the mobile phone can be retrieved and downloaded.

[0100] In accordance with another aspect of the present invention, in order to implement the above method for connecting the electronic apparatus (101) with a mobile device (102), there is provided a system for connecting an electronic apparatus (101) with a mobile device (102), wherein the electronic apparatus (101) comprises a first communication unit (103), and a second communication unit (104); wherein the second communication unit (104) comprises a first information (201) and a second information (202); wherein the first information (201) is associated with the first communication unit (103), and the second information (202) is associated with the electronic apparatus (101); wherein the first communication unit (103) also comprises the first information (201) and the second information (202); wherein the mobile device (102) and the second communication unit (104) are operable to be connected, and the first information (201) and the second information (202) are operable to be transmitted from the second communication unit (104) to the mobile device (102); wherein the mobile device (102) is operable to search for and connect with the first communication

unit (103) based on the first information (201); and, wherein, if the first communication unit (103) is discovered by and connected with the mobile device (102), the mobile device (102) is operable to register the electronic apparatus (101) based on the second information (202).

[0101] In those embodiments wherein the FCU (103) also comprises the second information (202) (e.g., the product serial number), the mobile device (102) could be further configured to compare the second information (202) received by the mobile device (102) from the SCU (104) and the second information (202) stored in the FCU (103). This comparison/verification step could further enhance the system of the present invention, ensuring that only the intended FCU (103) installed in the correct electronic massager (101) is connected.

[0102] In some embodiments, the second communication unit (104) is a Near Field Communication Chip or a scannable barcode (e.g., linear barcode (also known as one-dimensional barcode) and matrix barcode (also known as two-dimensional barcode)).

[0103] In some embodiments, the electronic apparatus (101) is a massage apparatus; wherein the massage apparatus is optionally a head massager, a neck massager, a back massager, a leg massager, a foot massager or a multiple-function massager.

[0104] In some embodiments, the first communication unit (103) is operable to communicate based on a short-range wireless technology; wherein the short-range wireless technology is optionally Bluetooth, Zigbee, Z-Wave or Wi-Fi.

[0105] In some embodiments, the mobile device (102) is a smartphone, a tablet, a personal digital assistant or a smartwatch. Unlike conventional methods and systems, such as the one illustrated in [Fig. 5], that require multiple user-involved steps, the present invention employs a technically simple means to achieve a much more automated and convenient way of product registration, specifically the registration of electronic massage apparatus with mobile devices such as smartphones, tablets, and smartwatches. As described above, the present invention only requires the user to connect the mobile device with the SCU (104) by, for example, tapping an NFC tag or scanning a QR code to retrieve and obtain the unique product information (e.g., product serial number) and the identification information of the FCU (103) (e.g., Bluetooth name).

[0106] The subsequent steps, including the connection between the mobile device (102) and the electronic massager (wherein the mobile device (102) utilizes the first information (e.g., Bluetooth name) obtained from the SCU (104) to search for the correct Bluetooth device, and accordingly the correct massager that comprises the correct Bluetooth) as well as the registration of the product and the downloading of the product assets, can all be performed automatically without any further involvement from the user. Specifically, steps S302, S303, S306, and S308 are no longer required. In other words, apart from activating the FCU (103) of the electronic massager (101) to start broadcasting, the user only needs to perform one simple step (e.g., tapping the NFC tag or scanning the QR code), which is straightforward and convenient for users across all age groups. In fact, in embodiments wherein the NFC chip is utilized as the SCU (104), the step of S304 (i.e., scanning of product code) can also be omitted, further simplifying the process.

[0107] If the NFC chip is further linked to the FCU (103), enabling the automatic activation of the FCU (103) when the NFC chip is tapped by the mobile phone, the user only needs to perform a simple tap of the NFC chip with their mobile phone to complete the entire process of product connection and registration reliably and efficiently. If there is no such auto-activation of the FCU (103), the user just needs to perform one additional step: turning on the electronic massage device before using the mobile device to connect with the SCU (104). This two-step process still remains relatively simple and straightforward for users across various age groups.

[0108] Furthermore, in the present invention, the SCU can be located at a less visible site (e.g., the back side) of the electronic massage device (as illustrated in [Fig. 4b]), as it is only required during the initial product connection and registration with a mobile device. In other words, the present invention eliminates the need for a two-code arrangement, which traditionally needs to be placed in a highly visible location on the electronic apparatus (as illustrated in [Fig. 4a]). This not only improves the aesthetic appeal of the massage apparatus but also reduces functional confusion, especially for senior users who may be less familiar with electronic gadgets.

[0109] In summary, the present invention provides a method and system for "Smart Connect" between electronic apparatuses, such as massagers, and mobile devices, including smartphones, tablets, PDAs, and smartwatches. This inventive approach

simplifies the connection and registration process, making it more user-friendly and efficient. By utilizing technologies like an SCU that comprises both product information and FCU information, and eliminating the need for multiple visible codes, the invention enhances both the aesthetic appeal and functionality of the electronic massagers. This streamlined method ensures that users, especially those who may not be technologically savvy, can easily connect and control their massagers through their mobile devices, thereby improving the overall user experience in learning how to use electronic massagers for personal wellness.

[0110] Furthermore, depending on the specific applications of the massage apparatuses, the present invention could be further configured to employ other designs and methods that could help achieve the intended technical advantages as described above. For example, the main purpose of having the SCU (104) is to provide a convenient way for the mobile device (102) to acquire the second information (e.g., product identity information such as the product serial number), which can then be utilized for product registration and downloading of product-specific assets from a network source. Another objective of having the SCU (104) is for the mobile device (102) to acquire the first information (e.g., identity information of FCU (103), such as the Bluetooth name) so that the mobile device (102) can utilize the first information to accurately and efficiently search for and connect with the correct FCU (103) (e.g., the correct Bluetooth device). Accordingly, in circumstances wherein the users can conveniently obtain the Bluetooth name through other approaches, the SCU (104) feature is not necessary. Instead, the FCU (103) can be configured to comprise the second information (e.g., product identity information such as the product serial number).

[0111] Thus, as illustrated in [Fig. 1b] and [Fig. 2b], in accordance with another aspect of the present invention, there is provided a method for connecting an electronic apparatus (101) with a mobile device (102), wherein the electronic apparatus (101) comprises a first communication unit (103), and the first communication unit (103) comprises both a first information (201) and a second information (202); wherein the first information (201) is associated with the first communication unit (103), and the second information (202) is associated with the electronic apparatus (101); wherein the method comprises the following steps: S201 searching, by the mobile device (102), for the first communication unit (103); S202 selecting the first communication unit (103) on

the mobile device (102) based on the first information (201); S203 connecting the first communication unit (103) and the mobile device (102); S204 receiving, by the mobile device (102), the second information (202) from the first communication unit (103); S205 registering the electronic apparatus (101) with the mobile device (102) based on the second information (202) received by the mobile device (102).

[0112] In other words, instead of utilizing the SCU to obtain the first information of the intended FCU, the user obtains the first information of the intended FCU from another channel, and accordingly can utilize the mobile device to search for and connect with the FCU directly. For example, the user can turn on the “looking for nearby Bluetooth” function on their mobile phone, which might show multiple broadcasting Bluetooth devices for the user to select from. As the user knows the Bluetooth name, the user can select the correct Bluetooth for connection, which, once connected with the mobile device (102), is programmed to transmit the second information (e.g., product serial number) to the mobile device (102). The mobile device (102) can then utilize the second information for product registration and downloading the relevant product assets from the internet.

[0113] Specifically, in some embodiments, this method further comprises the step of S206: downloading, by the mobile device (102), a corresponding electronic apparatus asset from a network source (105) based on the second information (202). In some embodiments, the electronic apparatus (101) is a massage apparatus; wherein the massage apparatus is optionally a head massager, a neck massager, a back massager, a leg massager, a foot massager or a multiple-function massager. In some embodiments, the first communication unit (103) is operable to communicate based on a short-range wireless technology; wherein the short-range wireless technology is optionally Bluetooth, Zigbee, Z-Wave or Wi-Fi. In some embodiments, the method according to any of Claim 26 – 29, wherein the mobile device (102) is a smartphone, a tablet, a personal digital assistant or a smartwatch.

[0114] Embodiment (“Smart Combo”)

[0115] As illustrated in [Fig. 3], [Fig. 4] and [Fig. 6], in accordance with another aspect of the present invention, there is provided a method for operating a first group of massage apparatuses (106) using a mobile device (102), wherein the massage apparatus (106) comprises a first communication unit (103) operable to establish

connection with the mobile device (102); wherein the method comprises the following steps of: S401 operating the mobile device (102) to connect with a plurality of the massage apparatuses (106) through the first communication unit (103); S402 selecting the first group of massage apparatuses (106) from the plurality of the massage apparatuses (106) connected with the mobile device (102); S403 selecting a massage program applicable to the first group of massage apparatuses (106); S404 operating the mobile device (102) to initiate the massage program (107), wherein the massage program (107) instructs the first group of massage apparatuses (106) to perform a massage operation.

[0116] For the mobile device (102) to effectively control the operation of multiple massagers, each massager is equipped with a first communication unit (FCU) that facilitates data communication with the mobile device (102). In some embodiments, the FCU (103) operates using short-range wireless technology. Examples of such technologies include Bluetooth, Zigbee, Z-Wave, or Wi-Fi.

[0117] In some embodiments, the mobile device (102) is a smartphone, a tablet, a personal digital assistant or a smartwatch.

[0118] The users can use the mobile device (102) to connect with the massage apparatuses (S401), which could use the various arrangements described in the Embodiment “Smart Connect”.

[0119] For example, to facilitate convenient product registration and connection of multiple massagers (e.g., massagers located nearby in the same household, massage outlet, or massage centre, multiple massagers interconnected), each massage apparatus (106) is equipped with a SCU (104) (e.g., an NFC chip or a scannable code). The SCU (104) comprises both a first information (201) and a second information (202). The first information (201) corresponds to the identification details of the FCU (103) (e.g., the Bluetooth name for a Bluetooth device installed in a massage apparatus), and the second information (202) corresponds to the identification details of the massage apparatus (106) (e.g., the product serial number of a massage apparatus).

[0120] For this first-time connection involving new massagers (e.g., a massager not previously registered under a specific user account under the mobile app installed in a mobile device), the user can use the mobile device (102) to connect with the SCU (104)

to acquire both the first information (e.g., Bluetooth name) and the second information (e.g., product serial number). If the SCU (104) is an NFC chip, the user can simply tap the mobile device (102) over the NFC chip to acquire the first and second information from the NFC chip (see [Fig. 7a]). If the SCU (104) is a scannable code (e.g., linear or matrix barcode), the camera of the mobile device (102) can be used to scan the scannable code and obtain the necessary information associated with the scannable code. Once the first information (e.g., Bluetooth name) is obtained, the mobile device (102) can then use this information to automatically search for the massagers intended to be registered with the mobile device (102), under a specific user account in the mobile app. Additionally, the mobile device (102) can use the second information (e.g., product serial number) to automatically download relevant assets from a network source specific to the massager. This setup enhances the overall convenience of connecting massagers with the mobile device, reducing the need for user actions, as described above in the embodiment “Smart Connect”.

[0121] In some embodiments, the FCU (103) (e.g., Bluetooth device) is also configured to include the second information (e.g., product serial number). In this specific arrangement, the inclusion of the second information inside the FCU (103), in addition to the second information stored inside the SCU (104), essentially serves as a “backup” in case the mobile device (102) fails to receive the second information from the SCU (104). Such a situation could occur if the product serial number was not written properly into the SCU (104) during manufacturing or if the SCU (104) has been corrupted, resulting in the loss or damage of the second information. In these scenarios, the mobile device (102) can still acquire the second information from the FCU (103) after discovering and connecting with the FCU (103) using the first information. Once the mobile device (102) obtains the second information, it can use this second information to register the specific massager with the mobile device (102), for example, by adding it to the product list under a specific user account and downloading the product assets related to the specific massager.

[0122] Once the required massagers are successfully registered with the mobile device, and the relevant product assets have been downloaded to the mobile device, the user can then see the list of registered products on the “Product List” User-Interface of the mobile app, convenient for initial and future connections. In some embodiments, for reconnection of the previously already registered product, the user can turn on the

mobile app, navigate to the “Product List” page, and simply click the massager listed in the “Product List” to complete the connection – steps such as the tapping of the mobile device (102) to the SCU (103) are not required.

[0123] Nevertheless, in some embodiments, instead of using the mobile app to reconnect the already registered massagers, users have the option to simply connect the mobile device (102) to the SCU (103) (e.g., tap the mobile phone on an NFC chip) to automatically initiate reconnection with the intended massagers. This method is particularly suitable for certain user groups, such as senior users, who may not be familiar with navigating mobile apps.

[0124] As illustrated in [Fig. 6a], among the connected message apparatuses (106), the user can then select some message apparatuses (106) from them, and combine them into a first group of massagers (i.e., a “Smart Combo”) (S402). Once the first group is formed, message programs available to the first group of massagers are recommended to the user for selection (S403). For example, as illustrated in [Fig. 8], the mobile app showcases various “Recommended Message Programs” for user selection, including options like “Signature,” “Neck & Shoulder,” and “Lumbar” programs. Each message program (107) can be operated based on the first group of massagers, operable to instruct these multiple massagers to operate together synergistically in a coordinated manner. For instance, in some embodiments, the message program (107) is operable to control a set of specialized massagers, such as head, neck, back, leg, and foot massagers. These massagers can work synergistically under the control of the message program (107) to provide a comprehensive massage treatment to an individual user. In other embodiments, the message program (107) coordinates the operation of two or more multi-functional massagers (e.g., massage chairs, sofas, or couches) (see [Fig. 3], 101a & 101b), enabling these massagers to deliver holistic massage treatments simultaneously to multiple users. This arrangement enhances the communal massage experience. Additionally, in some embodiments, two or more identical massage chairs or sofas are controlled by the message program to deliver the same massage treatment to multiple users at the same time. This setup allows users to enjoy identical massage treatments and share and discuss their experiences, fostering a shared wellness environment.

[0125] Once the message program is selected, the user can then operate the mobile

device (102) (e.g., typically through a mobile app) to initiate the massage program (e.g., neck & shoulder program), which then instructs each massage apparatus to perform a series of massage operation, via the mobile device (102) – FCU (e.g., Bluetooth) connection. For massage program involves a set of specialized massagers (e.g., head, neck, back, leg, and foot massagers), each massager is instructed to perform different massage operations, which can work together to provide a synergistic massage treatment to various parts of the user's body. In other embodiments, wherein the massagers are identical massage apparatuses, such as identical massage chairs, sofas or couches linked side-by-side (see [Fig. 3], 101a & 101b), the massage program is operable to instruct these massagers to perform the same massage operations to the multiple users, enabling them to have the same massage experiences.

[0126] In some embodiments, once the first group of massagers is selected, the locally stored product assets already include massage programs applicable to the first group of massagers. However, in some other embodiments, the first group of massagers selected might not have any corresponding massage program stored locally in the mobile device. In such a circumstance, depending on the product identify information of the massagers in the first group, the relevant massage programs stored remotely in a network source can be downloaded to the mobile phone, enabling these massagers to operate together.

[0127] In some embodiments, the massage program can be a prearranged program created by the manufacturer based on their understanding of user needs in the market. In other embodiments, the massage program can be designed by the user.

[0128] As illustrated in [Fig. 6b], in some embodiments, instead for the users to select and combine the massagers, the mobile app can showcase recommended massage programs to the user first. Each massage program (107) is linked with multiple massage apparatuses (106) (e.g., a set of specialized massagers, such as head, neck, back, leg, and foot massagers; or a set of several multifunction massagers, such as massage chairs, sofas or couches). When a user selects a particular massage program (107) on the mobile device (102) (S601), the selected massage program (107) is then programmed to automatically identify the associated massagers (S602) available in the household, outlet or treatment centre and then connect with their FCU (103) (e.g., Bluetooth devices) (S603). Once the massagers are connected, the user can then

operate the mobile device (102) to initiate the massage program (107), wherein the massage program (107) instructs the each of the plurality of massage apparatuses (106) to perform a massage operation (S604).

[0129] In some embodiments, the connection step can adopt or leverage the various arrangements described in the Embodiment “Smart Connect”. For example, to facilitate convenient product registration and connection of multiple massagers under a massage program, each massage apparatus (106) is equipped with a SCU (104) (e.g., an NFC chip or a scannable code). The SCU (104) comprises both a first information (201) and a second information (202). The first information (201) corresponds to the identification details of the FCU (103) (e.g., the Bluetooth name for a Bluetooth device), and the second information (202) corresponds to the identification details of the massage apparatus (106) (e.g., the product serial number of a massager).

[0130] In some embodiments, the mobile app is designed to recommend a variety of preset massage programs to the user. Each program corresponds to a specific second group of massage apparatuses that are compatible with the selected preset program. In these embodiments, users are guided to select a preset massage program that not only suits their needs but also provides a list of compatible massage apparatuses for further selection, connection, and operation. This feature is particularly advantageous for user groups such as those unfamiliar with massage apparatuses, who may benefit from guidance on recommended massage programs and appropriate types of massage apparatuses to use. These recommended massage programs could be suggested based on user-specific physiological parameters, such as gender, age, and body tension, conveniently enhancing the personalized massage experiences. As illustrated in [Fig. 9], in some embodiments, before step S404, each massage apparatus (106) is activated to assess whether it is in the predetermined position required for the massage operation, relative to the user using the massage apparatus (106). If the massager is not in the correct position, the massager must be adjusted into the predetermined position. Only after confirming that all of the plurality of massage apparatuses (106) are in the correct positions can the massage apparatuses (106) be operated by the mobile device (102), and the massage program (107) can be initiated.

[0131] In some embodiments, each massage apparatus (106) is operable to detect the neck and/or shoulder position of the user to assess whether the user is in the

predetermined position. For example, in some embodiments, the detection of the neck and shoulder positions is achieved through the movement of massage rollers located at the back of the user seated in the massage chair. These massage rollers can be programmed to travel along a predetermined pathway on the user's back (e.g., from top to bottom). Once the neck and shoulder positions are correctly identified, operation buttons or icons can appear on the user interface of the mobile app, allowing the user to initiate the specific massage program.

[0132] However, there are circumstances where the massage chair may have been used by another user previously, leaving the massage rollers out of their initial position when the current user sits down. In such cases, the massage rollers are programmed to automatically return to their initial position first (as indicated by "Massage Roller Moving" in the left image of [Fig. 9]). Only after the rollers have returned to their initial position will the system begin the neck and shoulder detection process. This ensures that each user receives a consistent and accurate assessment of their position, allowing for the effective operation of the massage program.

[0133] In some embodiments, wherein the massage program (107) comprises two or more identical massage apparatuses; wherein the massage program (107) instructs the two or more identical massage apparatuses to start performing the massage operation simultaneously after the users of the two or more identical massage apparatuses are detected to be in the predetermined positions (e.g., the detection of neck and shoulder positions is completed on all massage apparatuses). Specifically, as illustrated in [Fig. 10], after the neck and shoulder detection as described above, the user can perform shoulder position adjustment manually through the mobile app (S501), which could provide an operation panel for the user to drag the pointer on the User-Interface to adjust shoulder position.

[0134] In some embodiments, when the massage program involves multiple users using multiple massage apparatuses, the method performs an additional step S502 to check whether all massage apparatuses have detected that the users are in the predetermined positions (e.g., whether all massage chairs have detected the shoulders of the users). If the users are already in the predetermined positions, the massage apparatuses can then be listed in the user interface of the mobile app for further adjustment (S503).

[0135] For example, the listed massage apparatuses can be classified as “main chair” and “sub chair.” For each specific massage chair, the treatment intensity can be manually adjusted or refined to cater to the specific needs of the users. However, if some users are not yet in the predetermined positions (e.g., the shoulders of some users have not been detected), the method proceeds to step S504, waiting for all massage apparatuses to confirm that the users are in the correct positions.

[0136] In some embodiments, the user interface of the mobile app also provides an option for the user to return to the main dashboard of the app (S505), allowing them to initiate other functions and operations (switch to other massage programs).

[0137] The "Smart Combo" feature provides a convenient way for users to utilize a massage program involving multiple massagers. This arrangement is particularly advantageous for users with diverse needs for enhanced massage treatments and experiences. For example, by synergistically combining various specialized massage apparatuses into a "smart combo," users can receive massage treatments targeting different body parts simultaneously. The present invention associates the relevant massagers under a single massage program, allowing the user to simply select the program to identify and connect the massagers. The massage program can be pre-created by the manufacturer or customized by users who are savvy with massage apparatuses.

[0138] Additionally, for users who desire to share identical massage treatments while seated in massage chairs positioned closely together, the massage program can be tailored to incorporate multiple chairs, all manageable via a single mobile device, such as a smartphone, tablet, or smartwatch. Upon verification that users are correctly seated, as confirmed by shoulder and neck position detection, the massage program can be activated. This triggers the massage chairs to simultaneously deliver the same treatment actions. Furthermore, this setup could also be configured to support individual customization, allowing adjustments to each massager's settings based on the unique preferences of each user. This feature not only enhances the communal experience by ensuring uniform treatment across all chairs but also respects individual comfort levels, making it ideal for family use or shared spaces like spas and wellness centres.

[0139] Furthermore, by leveraging the "Smart Connect" technology, the multiple massagers associated with a massage program can be easily registered, connected,

and reconnected with a mobile device. This allows a single mobile device to manage and control the massagers without requiring extensive or complicated user actions. This significantly enhances the user experience, even in scenarios involving multiple massagers or multiple users. This technology is particularly advantageous for senior users who desire more advanced or sophisticated massage treatments. The intuitive and simplified connectivity ensures that even those who are not tech-savvy can easily manage complex massage setups, thereby broadening access to therapeutic benefits.

[0140] It should be further appreciated by the person skilled in the art that variations and combinations of features described above, not being alternatives or substitutes, may be combined to form yet further embodiments falling within the intended scope of the invention.

[0141] As would be understood by a person skilled in the art, each embodiment, may be used in combination with other embodiment or several embodiments.

Claims

Claim 1. A method for connecting an electronic apparatus (101) with a mobile device (102),

wherein the electronic apparatus (101) comprises a first communication unit (103), and a second communication unit (104);

wherein the second communication unit (104) comprises a first information (201) and a second information (202); wherein the first information (201) is associated with the first communication unit (103), and the second information (202) is associated with the electronic apparatus (101);

wherein the first communication unit (103) also comprises the first information (201);

wherein the method comprises the following steps:

S101 connecting the mobile device (102) and the second communication unit (104);

S102 transmitting, from the second communication unit (104), the first information (201) and the second information (202) to the mobile device (102);

S103a searching for the first communication unit (103), by the mobile device (102), based on the first information (201);

S103b if the first communication unit (103) is discovered, connecting the mobile device (102) and the first communication unit (103); and,

S104 registering the electronic apparatus (101) with the mobile device (102) based on the second information).

Claim 2. The method according to Claim 1, wherein the first communication unit (103) also comprises the second information (202).

Claim 3. The method according to Claim 1 or Claim 2, wherein the second communication unit (104) is a Near Field Communication Chip.

Claim 4. The method according to Claim 3, further comprising: after the step of S101 and before the step of S103, activating, by the Near Field Communication Chip, the first communication unit (103).

Claim 5. The method according to Claim 1, wherein the second communication unit (104) is a scannable barcode.

Claim 6. The method according to Claim 5, wherein the scannable barcode is a linear barcode.

Claim 7. The method according to Claim 5, wherein the scannable barcode is a matrix barcode.

Claim 8. The method according to any of the preceding claims, further comprising: before the step of S103, activating the first communication unit (103).

Claim 9. The method according to any of the preceding claims, further comprising: downloading, by the mobile device (102), a corresponding electronic apparatus asset from a network source (105) based on the second information (202).

Claim 10. The method according to any of the preceding claims, wherein the electronic apparatus (101) is a massage apparatus.

Claim 11. The method according to Claim 10, wherein the massage apparatus is a head massager, a neck massager, a back massager, a leg massager, a foot massager or a multiple-function massager.

Claim 12. The method according to Claim 11, wherein the multiple-function massager is a massage chair, a massage sofa or a massage couch.

Claim 13. The method according to Claim 10, wherein the second communication unit (104) is positioned at backside of the massage apparatus.

Claim 14. The method according to Claim 10, wherein the corresponding electronic apparatus asset comprises a massage program.

Claim 15. The method according to any of the preceding claims, wherein the first communication unit (103) is operable to communicate based on a short-range wireless technology.

Claim 16. The method according to Claim 15, wherein the short-range wireless technology is Bluetooth, Zigbee, Z-Wave or Wi-Fi.

Claim 17. The method according to any of Claim 1 – 16, wherein the mobile device (102) is a smartphone, a tablet, a personal digital assistant or a smartwatch.

Claim 18. The method according to any of Claim 1 – 17, wherein the first information (201) comprises an identification information of the first communication unit (103).

Claim 19. The method according to any of Claim 1 – 18, wherein the second information (202) comprises a serial number of the electronic apparatus (101).

Claim 20. A system for connecting an electronic apparatus (101) with a mobile device (102),

wherein the electronic apparatus (101) comprises a first communication unit (103), and a second communication unit (104);

wherein the second communication unit (104) comprises a first information (201) and a second information (202); wherein the first information (201) is associated with the first communication unit (103), and the second information (202) is associated with the electronic apparatus (101);

wherein the first communication unit (103) comprises the first information (201);

wherein the mobile device (102) and the second communication unit (104) are operable to be connected, and the first information (201) and the second information (202) are operable to be transmitted from the second communication unit (104) to the mobile device (102);

wherein the mobile device (102) is operable to search for and connect with the first communication unit (103) based on the first information (201); and,

wherein, if the first communication unit (103) is discovered by and connected with the mobile device (102), the mobile device (102) is operable to register the electronic apparatus (101) based on the second information (202).

Claim 21. The system according to Claim 20, wherein the first communication unit (103) comprises the second information (202).

Claim 22. The system according to Claim 20 or Claim 21, wherein the second communication unit (104) is a Near Field Communication Chip or a scannable barcode.

Claim 23. The system according to any of Claim 20 – 22, wherein the electronic apparatus (101) is a massage apparatus; wherein the massage apparatus is optionally a head massager, a neck massager, a back massager, a leg massager, a foot massager or a multiple-function massager.

Claim 24. The system according to any of Claim 20 – 23, wherein the first communication unit (103) is operable to communicate based on a short-range wireless technology; wherein the short-range wireless technology is optionally Bluetooth, Zigbee, Z-Wave or Wi-Fi.

Claim 25. The system according to any of Claim 20 – 24, wherein the mobile device (102) is a smartphone, a tablet, a personal digital assistant or a smartwatch.

Claim 26. A method for connecting an electronic apparatus (101) with a mobile device (102),

wherein the electronic apparatus (101) comprises a first communication unit (103), and the first communication unit (103) comprises both a first information (201) and a second information (202); wherein the first information (201) is associated with the first communication unit (103), and the second information (202) is associated with the electronic apparatus (101);

wherein the method comprises the following steps:

S201 searching, by the mobile device (102), for the first communication unit (103);

S202 selecting the first communication unit (103) on the mobile device (102) based on the first information (201);

S203 connecting the first communication unit (103) and the mobile device (102);

S204 receiving, by the mobile device (102), the second information (202) from the first communication unit (103);

S205 registering the electronic apparatus (101) with the mobile device (102) based on the second information (202) received by the mobile device (102).

Claim 27. The method according to Claim 26, further comprising S206, downloading, by the mobile device (102), a corresponding electronic apparatus asset from a network source (105) based on the second information (202).

Claim 28. The method according to Claim 26 or Claim 27, wherein the electronic apparatus (101) is a massage apparatus; wherein the massage apparatus is optionally a head massager, a neck massager, a back massager, a leg massager, a foot massager or a multiple-function massager.

Claim 29. The method according to any of Claim 26 - 28, wherein the first communication unit (103) is operable to communicate based on a short-range wireless technology; wherein the short-range wireless technology is optionally Bluetooth, Zigbee, Z-Wave or Wi-Fi.

Claim 30. The method according to any of Claim 26 - 29, wherein the mobile device (102) is a smartphone, a tablet, a personal digital assistant or a smartwatch.