Student 1025

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TITLE OF THE INVENTION

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Method and System for Real-Time Heart Rate Monitoring and Dual-Channel Composite Audio File Creation

OK = Summary, Brief Desc, abstract, Figures
Background - Watch out for Broad Language - Disclose PA in terms of limitations
- Decent Validation - could have been much more specific + clear, but you at least hit the high point → Best in the class

- Included AI example, premium
- No celebrity affirmation
- Disclosed chat GPT, Polly, Soundation + Earphones
- Disclosed Binaural Beats - only student who did
- Claims need a lot of work. I urge you to discuss w/ classmates + I would be happy to discuss

BACKGROUND OF THE INVENTION

[0001] The present invention is related to utilizing physiological data for detecting stress. More particularly, to a method and system for taking responsive action to mitigate detected user stress using audio stimulus.

[0002] Stress is technically not a disease, nonetheless it can have lasting effects on an individual's mental health. Rather, it is considered a response. Specifically, it is one of the body's natural physical, mental, and emotional responses to an external stressor. It leaves lasting effects on an individual's mental and overall health.

[0003] About one-third of people around the world reported feeling stressed. In our increasingly stressful world, recognizing and managing stress is crucial for our well-being. In recent years the self-reported cases of stress have skyrocketed and rarely can anyone escape it.

[0004] US Patent 11,540,759 by Flood et al. discloses a technology for biosignal headphones. These headphones feature earcups linked by a headband and integrate EEG sensors to track and offer insights into the user's mental state, including their concentration levels. Emphasizing optimal scalp contact for precise data gathering, the design incorporates sophisticated signal processing and machine learning algorithms to enable real-time monitoring of cognitive states. This advancement has wide-ranging applications, from aiding in mental health management to enhancing cognitive performance, particularly beneficial for individuals with attention deficit disorders.

[0005] US 2019/0387998 A1 by Garten et al. disclose a system and method for associating music with brain-state data. This publication teaches a comprehensive framework that integrates bio-signal and environmental data to enhance shared user experiences. This system enables real-time analysis of users' physiological and environmental states, employs rule-based decision-making processes, and generates personalized sensory outputs tailored to individual users. It accommodates multi-modal sensory inputs, facilitates real-time feedback and adjustment, and supports scalability and connectivity for shared experiences across different locations. Additionally, it includes the integration of EEG brain scan data with music, allowing for personalized music recommendations based on the user's current emotional state detected through their EEG scan. This approach enhances the user's experience by providing music that aligns with their mood or feelings, thereby offering a holistic approach to optimizing user experiences through advanced sensory stimuli and data-driven methods.

[0006] US 20200138299A1 by Goldman discloses a hearing system with heart rate monitoring and related method. This patent discloses a method and system for operating a hearing system comprising two hearing devices, each designed for one ear of the user. The method involves obtaining sensor data from the devices, which includes physiological information related to the user's auditory system. This data is then compared between the two devices to determine parameters indicative of various aspects, such as hearing sensitivity balance or the presence of atrial fibrillation. Additionally, motion data may be utilized for comparison purposes. Parameters are used to generate output signals, potentially aiding in adjusting device settings or providing health-related feedback to the user. The system may incorporate features like identifying deviations from default physiological data and utilizing Heart Rate Variability analysis. Overall, this approach aims to optimize hearing device functionality and potentially monitor the user's health condition.

[0007] US20210353904A1 by Hanbury et al. discloses a method and system for treating anxiety and depression. The method and system described in the patent offer a non-pharmaceutical approach to alleviate anxiety and depression. It utilizes visual and auditory stimuli, including sinusoidally varying light sources and amplitude-modulated audio frequencies, tailored to synchronize with brain wave frequencies. Real-time feedback from sensors personalizes the treatment, administered through a specialized headset with precise technical specifications. This innovative method aims to influence mental and emotional states significantly, providing an alternative treatment option.

BRIEF SUMMARY OF THE INVENTION

[0008] One or more of the embodiments of the present invention provides a comprehensive system for real-time monitoring of heartbeats and generating alerts based on Heart Rate Variability (HRV) thresholds. This system comprises two main components: a heartbeat-sensing electronic device and an electronic device equipped with sensory outputs and data processing capabilities. The heartbeat-sensing device is equipped with sensors to detect and measure heartbeat signals, a converter to digitize these signals, and a transceiver for communication with a processor. On the other hand, the electronic device includes sensory outputs like audio components for alert notifications, a user interface for interaction, and data storage for storing alert files and HRV threshold information. The processor within the system receives and processes digital heartbeat data, calculates instantaneous HRV data, compares it with predetermined thresholds, stores the data, and transmits audio alerts. In addition to heart rate monitoring, the present invention also covers a system for creating dual-channel composite audio files. This system involves an electronic device, a host server, and a mixer server. The electronic device receives and transmits dual-channel composite audio input data, equipped with data storage and a processor. The host server facilitates data handling with its transceiver, storage unit, and processor. Meanwhile, the mixer server, with its processor and transceiver, generates sound waves at specific frequencies in separate mono channels and combines them to create dual-channel composite audio files. These files can then be stored, transmitted, or streamed as needed.

[0009] Furthermore, the present invention extends to a method for creating dual channel composite audio files, involving similar steps to the system described earlier. This method includes receiving and transmitting dual channel composite audio input data, generating sound waves at specific frequencies in separate mono channels, combining these waves to create a dual channel composite audio file, and storing or transmitting the file as required. Additionally, the method can involve transmitting the audio file back to the computing device or streaming it to a dual-piece aural device, transmitting audio signals of different frequencies.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] Figure 1 illustrates a system configured to alerting a user when HRV value is less than the threshold and create a dual channel composite audio file according to an embodiment of the present invention

[0011] Figure 2 illustrates a system configured to alerting a user when HRV value is less than the threshold and create a dual channel composite audio file according to an alternate embodiment of the present invention

[0012] Figure 3 illustrates a system configured to alerting a user when HRV value is less than the threshold and create a dual channel composite audio file according to an alternate embodiment of the present invention

[0013] Figure 4 illustrates a system configured to alerting a user when HRV value is less than the threshold and create a dual channel composite audio file according to an alternate embodiment of the present invention

[0014] Figure 5 illustrates a user interface presented to the user for display of alert according to an embodiment of the present invention

[0015] Figure 6 illustrates a user interface presented to the user when the user chooses to stream a dual channel composite audio file according to an embodiment of the present invention

[0016] Figure 7A illustrates a user interface presented to the user when the user wants to customize their choices for creating a dual component composite audio file according to an embodiment of the present invention

[0017] Figure 7B illustrates a user interface presented to the user when the user wants to customize their choices for creating affirmations according to an embodiment of the present invention

[0018] Figure 8 illustrates a user interface presented to the user when the user requests information regarding the effectiveness of the dual channel composite audio streaming sessions according to an embodiment of the present invention

[0019] Figure 9 illustrates a flowchart of a method to provide instructions to calculate heart rate variability (HRV) and send alerts according to an embodiment of the present invention

[0020] Figure 10A illustrates a flowchart of a method to provide instructions to create a dual channel composite audio file and deliver to an electronic device according to an embodiment of the present invention

[0021] Figure 10B illustrates a flowchart of a method to provide instructions to create a customized affirmation file according to an embodiment of the present invention

[0022] Figure 10C illustrates an example of AI-generated affirmation data

[0023] Figure 11 illustrates a flowchart of a method to provide instructions to calculate parmeters regarding effectiveness of the dual channel composite audio streaming session according to an embodiment of the present invention

[0024] Figure 12A illustrates components of the host server data storage according to an embodiment of the present invention

[0025] Figure12B illustrates components of First user profile Data Table according to an embodiment of the present invention

[0026] Figure 12C illustrates components of First user audio file data table according to an embodiment of the present invention

[0027] Figure 12D illustrates components of First user base tone data table according to an embodiment of the present invention

[0028] Figure 12E illustrates components of First user beat tone data table according to an embodiment of the present invention

[0029] Figure 12F illustrates components of First user affirmation data table according to an embodiment of the present invention

[0030] Figure 12G illustrates components of First user history data table according to an embodiment of the present invention

[0031] Figure12H illustrates components of N user profile Data Table according to an embodiment of the present invention

[0032] Figure 12I illustrates components of N user audio file data table according to an embodiment of the present invention

[0033] Figure 12J illustrates components of N user base tone data table according to an embodiment of the present invention

[0034] Figure 12K illustrates components of N user beat tone data table according to an embodiment of the present invention

[0035] Figure 12L illustrates components of N user affirmation data table according to an embodiment of the present invention

[0036] Figure 12M illustrates components of N user history data table according to an embodiment of the present invention

[0037] Figure 14 illustrates the component of the first computing device data storage according to an embodiment of the present invention

[0038] Figure 15 illustrates the components of the second computing device data storage according to an embodiment of the present invention

[0039] Figure 16 illustrates the flowchart for making premium content available to the user

DETAILED DESCRIPTION OF THE INVENTION

[0040] Figure 1 illustrates a system according to an embodiment of the present invention. The embodiment includes a wearable device 100, a first computing device 200, a host server 300, a language model server 400, a mixer 500 and a text-to-voice converter server 600.

[0041] The wearable device 100 includes a wearable device heartbeat sensor 101, a wearable device processor 102, a wearable device analog to digital converter 103, a wearable device transceiver 104, a wearable device first speaker 105a, a wearable device second speaker 105b, a wearable device power supply 106 and a wearable device network controller 107.

[0042] The first computing device 200 further includes a first computing device user interface 201, a first computing device processor 202, a first computing device system clock 203, a first computing device transceiver 204, a first computing device speaker 205, a first computing device power supply 206, a HRV calculator 207, a first computing device data storage 208, a first computing device audio output component 209, a first computing device visual output component 210 and a first computing device network controller 211.

[0043] The host server 300 comprises of a host server processor 302, a host system clock 303, a host server transceiver 304, a host server power supply 306, a binaural beats module 307, a host server data storage 308 and a host server network controller 309.

[0044] The mixer 500 comprises of a mixer processor 502, a mixer first mono channel 503, a mixer second mono channel 504, mixer sound wave generator 505 and a mixer transceiver 501.

[0045] In the preferred embodiment of the present invention, the wearable device 100 is a headphone comprising a minimum of two earpieces and a heartbeat sensor.

[0046] In wearable device 100, the wearable device processor 102 is in electronic data communication with wearable device heartbeat sensor 101, wearable device analog to digital converter 103, wearable device transceiver 104, The wearable device system clock 105, wearable device power supply 106, wearable device data storage 108, wearable device user interface 109 and wearable device first and second speakers 105a and 105b. The wearable device power supply 106 supplies power to the entire wearable device system 100. The wearable device transceiver 104 is in electronic data communication with the first computing device transceiver 204 and the host server transceiver 303 for external communication.

[0047] In the preferred embodiment of the present invention, the first computing device 200 is a handheld communication and computing device with telephony features like a smartphone.

[0048] In the first computing device 200, the first computing device power supply 206 supplies power to all the components of the first computing device 200. The first computing device processor 202 is in electronic data communication with the first computing device user interface 201, first computing device system clock 203, first computing device transceiver 204, first computing device speaker 205, first computing device power supply 206, first computing device HRV calculator 207, first computing device storage 208, first computing device audio output component 209 and first computing device visual output component 210. The first computing device HRV calculator 207 is in electronic data communication with the first computing device storage 208. The first computing device transceiver 204 is in electronic data communication with the first computing device storage 208. The first computing device transceiver 204 is in electronic data communication with the wearable device transceiver 104 and the host server transceiver 304 for external communication.

[0049] In the host server 300, the host server processor 302 is in electronic data communication with host server system clock 303, host server transceiver 304, host server power supply 306, Binaural beats module 307 and host server data storage 308. The host server transceiver 304 is in electronic data communication with the host data server storage 308. The host server data storage 308 is in electronic data communication with the Binaural beats module 307. The host server transceiver 304 is in electronic data communication with language model 400 through the language model transceiver 401. The host server transceiver 304 is in electronic data communication with mixer 500 through the mixer transceiver 501. The host server transceiver 304 is in electronic data communication with voice-to-text converter server 600 through the voice-to-text converter server transceiver 601. The host server transceiver 304 is in electronic data communication with wearable device 100 through the wearable device transceiver 104. The host server transceiver 304 is in electronic data communication with first computing device 200 through the first computing device transceiver 204.

[0050] The mixer processor 502 is in electronic data communication with a mixer first mono channel 503, a mixer second mono channel 504, mixer sound wave generator 505 and a mixer transceiver 501. The mixer transceiver 501 is in electronic data communication with the host server transceiver 304.

[0051] Describing the operation of the embodiment in the present invention, the required power within wearable device 100 is supplied by the wearable device power supply 106. The wearable device system clock 108 synchronizes temporal operations and regulates data transmission rates. The wearable device speakers (105a, 105b) emit audio signals in such a way that the audio signal originating from the first channel is selectively routed to either the wearable device's first speaker or its second speaker, while the audio signal originating from the second channel is directed to the alternate speaker.

[0052] The wearable device heartbeat sensor 101 measures the heartbeat of a user, creates an analog signal of the heartbeat data and transmits the analog heartbeat signal to the first wearable device processor 102. The wearable device analog to digital converter 103 converts the analog data into digital form for further processing. The wearable device transceiver 104 transmits digital heartbeat data to the first computing device transceiver 204 of the first computing device 200.

[0053] Upon reception of the digital heartbeat data from the wearable device transceiver 104, the first computing device transceiver 204 stores the received digital heartbeat data in the first computing device data storage 208. Following this storage process, upon receiving instructions from the first computing device processor 202, the digital heartbeat data stored in the first computing device data storage 208 is retrieved and transmitted to the HRV calculator 207. The HRV calculator 207 utilizes standardized algorithms stored within the first computing device data storage 208 to convert the digital heartbeat data into Heart Rate Variability (HRV) data. Upon completion of the conversion process, the resultant current HRV data is stored in the first computing device data storage 208. The first computing device processor 202 retrieves HRV threshold data stored in the first computing device data storage 208, compares HRV threshold data with the current HRV data stored in the first computing device data storage 208 and initiates appropriate actions if the current HRV data is below the threshold HRV data. If the current HRV data is not below the threshold HRV data, the first computing device processor 202 continues to compare the current HRV data to the HRV threshold data. When the first computing device processor 202 determines that the current HRV data is less than the threshold HRV data, the first computing device processor 202 retrieves instructions from the first computing device data storage 208 to activate the alert system.

[0054] The activation of the alert system in turn activates retrieval from the first computing device data storage 208 of audio alert data 2302 and text alert data 2303 (shown in Figure 5) that contains the information to be displayed on the first computing device user interface 201 and within the textual file, dual channel composite audio initiation command 2004 which activates the Binaural Beats module 307. The first computing device transceiver 204 upon receiving instructions from the first computing device processor 202 transmits data from the alert system to various embodiments discussed below.

[0055] The alert that is displayed on the first computing device interface is shown in Figure 5.

[0056] In one embodiment, the alert is a visual message sent to the first computing device 200, where the first computing device processor 202 retrieves the text alert data 2303 stored in the first computing device data storage 208 and displays the text determined from the text alert data 2303 on the first computing device user interface 201 utilizing the first computing device visual output component.

[0057] In another embodiment, the alert comprises both a visual message and an audio signal sent to the first computing device 200, where the first computing device processor 202 retrieves the text alert data 2303 stored in the first computing device data storage 208 and displays the text determined from the text alert data 2303 on the first computing device user interface 201 utilizing the first computing device visual output component 210. Simultaneously, the first computing device processor 202 retrieves audio alert data 2302 from the first computing device data storage 208 and transmits the audio signal determined from the audio alert data 2302 to the first computing device speaker 205 utilizing the first computing device audio output component 209.

[0058] In another embodiment, the alert comprises both a visual message and an audio signal, with the visual alert sent to the first computing device 200 and the audio signal sent to the wearable device 100. In this embodiment, the first computing device processor 202 retrieves text alert data 2303 stored in the first computing device data storage 208 and displays the text determined from the text alert data 2303 on the first computing device user interface 201 utilizing the first computing device visual output component 210. Simultaneously, the first computing device transceiver 204 retrieves audio alert data 2302 from the first computing device data storage 208 and transmits it to wearable device 100 through the wearable device transceiver 104. The wearable device first and second speakers 105a and 105b, outputs the audio signal determined from the audio alert data 2302.

[0059] In operation, the host server 300, time reference for operational synchronization is derived from the host server clock 303. Host server transceiver 304 transmits and receives data from the wearable device 100, first computing device 200, language model server 400, mixer 500 and text-to-voice converter server 600. The host server power supply 306 provides the requisite power to the host server 300. The binaural beats module 307 generates personalized dual-channel composite audio files aimed at augmenting HRV values. Data about individual users and application-related data for all users of the Binaural Beats module 307 are stored in the host server data storage 308. The host server 300 transmits and receives data from the language model server 400 to produce customized affirmation text files which are stored in the host server data storage 308 as the First user first AI generated affirmation text data 1738 or First user nth AI generated affirmation text data 1738 or N-user first AI generated affirmation text data 1782 or N-user nth AI generated affirmation text data 1783.

[0060] Furthermore, the host server 300 transmits and receives data from the text-to-voice converter server 600 to convert affirmation text data into audio data which is stored in the host server data storage 308 as First user first text-to-voice converted audio file data 1740 or First user nth text-to-voice converted audio file data 1741 or N-user first text-to-voice converted audio file data 1784 or N-user nth text-to-voice converted audio file data 1785.

[0061] Additionally, the host server 300 transmits and receives data from the mixer 500 to generate dual-channel composite audio files which is stored in the host server data storage 308 as First user first dual channel composite audio file data 1730 or First user nth dual channel composite audio file data 1731 or N-user first dual channel composite audio file data 1774 or N-user nth dual channel composite audio file data 1775.

[0062] The functionalities and data communication among the host server 300 and language model server 400 and mixer 500 and text-to-voice converter server 600 are further explained in Figures 10A and 10B.

[0063] Upon receipt of data corresponding to the selection of the "Yes" button on the dual channel composite audio initiation command 2004 through the user interface, transmission of the data corresponding to the selection of the "Yes" button occurs from the first computing device 200 to the host server 300 with the first computing device transceiver 204 transmitting the data corresponding to the selection of the "Yes" button to the host server transceiver 304 and host server transceiver 304 transmitting data corresponding to the selection of the "Yes" button to the host server 300. Subsequently, the host server processor 302 either generates a new dual-channel composite audio file and stores it in the host server data storage 308 under the user repository data table 1702 or retrieves an existing dual-channel composite audio file from the host server data storage 308. The host server transceiver 304 transmits the data contained in this dual-channel composite audio file to the first computing device transceiver 204 which subsequently transmits the data contained in the dual-channel composite audio file to the wearable device 100 through the wearable device transceiver 104. The wearable device speakers 105a and 105b convert the data contained in dual-channel composite audio file to an audio signal. Subsequently, the wearable device speakers 105a, 105b emit audio signals in such a way that the audio signal originating from the first channel is selectively routed to either the wearable device's first speaker or its second speaker, while the audio signal originating from the second channel is directed to the alternate speaker.

[0064] In one embodiment of the present invention, the headphones of the wearable device 100 are configured to envelop the user's ears, comprising a minimum of two earpieces.

[0065] In an alternate embodiment of the present invention, the headphones of the wearable device 100 are configured for insertion into the user's ear canal comprising a minimum of two earpieces.

[0066] In an alternate embodiment of the present invention, the wearable device 100 is Jabra Elite Sports Earbuds or Bose SoundSport Pulse or Philip Action Fit.

[0067] In one embodiment, the first computing device 200 is a portable computing device with a large touchscreen display like an iPad.

[0068] In another embodiment, the first computing device 200 is a portable computer.

[0069] In another embodiment, the first computing device 200 is a desktop computer.

[0070] The wearable device transceiver 104, first computing device transceiver 204, host server transceiver 304, language model server transceiver 401, mixer transceiver 501, text-to-voice server transceiver 601 can be either a Bluetooth type transceiver, a wireless transceiver, a cellular transceiver or a wired communication transceiver.

[0071] In the preferred embodiment of the present invention, language model server 400 is a ChatGPT server.

[0072] In an alternate embodiment, the language model server 400 is any large language model server.

[0073] In the preferred embodiment of the present invention, the mixer 500 is the Soundation server.

[0074] In an alternate embodiment, the mixer 500 is a server that allows the users to create dual channel composite audio file.

[0075] In the preferred embodiment of the present invention, the text-to-voice converter server 600 is Amazon Polly server.

[0076] In an alternate embodiment, the text-to-voice converter server 600 is a server that converts textual data into audio data.

[0077] Figure 2 illustrates system 715 according to an embodiment of the present invention.

[0078] The present embodiment is similar to the embodiment described in Figure 1 except that this embodiment does not have the wearable device 100. Instead, this embodiment includes a wearable fitness tracker device 700, and an Aural Device 800.

[0079] The wearable fitness tracker device 700 comprises of a wearable fitness tracker device heartbeat sensor 701, wearable fitness tracker device processor 702, a wearable fitness tracker device analog to digital converter 703, a wearable fitness tracker device transceiver 704, a wearable fitness tracker device system clock 705, a wearable fitness tracker device power supply 706, a wearable fitness tracker device data storage 708, a wearable fitness tracker device user interface 709 and a wearable fitness tracker speaker 711.

[0080] The aural device 800 includes an aural device processor 802, an aural device transceiver 804, an aural device first speaker 805a, an aural device second speaker 805b and an aural device power supply 806.

[0081] The wearable fitness tracker device power supply 706 supplies power to all components in wearable fitness tracker device 700. The wearable device fitness device processor 702 is in electronic data communication with wearable fitness tracker device heartbeat sensor 701, wearable fitness tracker device analog to digital converter 703, wearable fitness tracker device transceiver 704, The wearable fitness tracker device system clock 705, wearable fitness tracker device power supply 706, wearable fitness tracker device data storage 708, wearable fitness tracker device user interface 709 and wearable fitness tracker device speaker 711.

[0082] The wearable fitness tracker device analog to digital converter 703 is in electronic data communication with the wearable fitness tracker device transceiver 704. The wearable fitness tracker device data storage 708 in electronic data communication with the wearable fitness tracker device transceiver 704. The wearable fitness tracker device transceiver 704 is in electronic data communication with the First Computing Device transceiver 204.

[0083] In addition, the Aural Device processor 802 is in electronic data communication with the Aural Device transceiver 804. The Aural Device first and second speakers 805a and 805b are in electronic data communication with the Aural Device processor 802. The Aural Device power supply 804 supplies power to all components in the Aural Device 800. The Aural Device transceiver 804 is in electronic data communication with host server transceiver 304 and first computing device transceiver 204.

[0084] The wearable fitness device speaker 711 is an output conduit for transmitting audio signal.The wearable fitness tracker device system clock 705 synchronizes temporal operations and regulate data transmission rates.

[0085] The wearable fitness tracker device transceiver 704, first computing device transceiver 204, host server transceiver 304, language model server transceiver 401, mixer transceiver 501, text to voice server transceiver 601 can be either a Bluetooth type transceiver, a wireless transceiver, a cellular transceiver, or a wired communication transceiver.

[0086] In operation, the wearable fitness tracker device heartbeat beat sensor 701 measures the heartbeat of a user, creates an analog signal of the heartbeat data, and transmits the analog heartbeat signal to the wearable fitness tracker device processor 702. The wearable fitness tracker device analog to digital converter 703 converts the heartbeat analog signal into digital form for further processing. The wearable fitness tracker device transceiver 704 transmits digital heartbeat data to the first computing device transceiver 204 of the first computing device 200.

[0087] The operation of the first computing device 200, host server 300, language model server 400, mixer 500 and text-to voice converter server 600 are described in Figure 1.

[0088] Upon the activation of the alert system when the current HRV data is less than the threshold HRV data, the first computing device transceiver 204 retrieves the audio alert data 2302 and a text alert data 2303, from the first computing device data storage 208, and transmits data from the alert system to various embodiments discussed below.

[0089] In one embodiment, the alert comprises both a visual message and an audio signal, with the text alert data 2303 sent to the first computing device 200 and the audio alert data 2302 sent to the aural device 800. Particularly, the first computing device processor 202 retrieves the text alert data 2303 stored in the first computing device data storage 208 and displays the text determined from the text alert data 2303 it on the first computing device user interface 201 utilizing the first computing device visual output component. Simultaneously, first computing device transceiver 204 retrieves audio alert data 2302 from the first computing device data storage 208 and transmits it to the aural device transceiver 804. The aural device first and second speakers 805a and 805b, outputs the audio signal determined from the audio alert data 2302.

[0090] In another embodiment, the alert comprises both a visual message and an audio signal, with the text alert data 2303 sent to the wearable fitness tracker device 700 and first computing device 200 and the audio alert data 2302 sent to the aural device 800. Particularly, the first computing device transceiver 204 retrieves the text alert data 2303 stored in the first computing device data storage 208 and transmits the text alert data to wearable fitness tracker device transceiver 704 which in turn displays the text determined from the text alert data 2303 it on the wearable fitness tracker device user interface 709. Additionally, the first computing device processor 202 retrieves the text alert data 2303 stored in the first computing device data storage 208 and displays the text determined from the text alert data 2303 it on the first computing device user interface 201 utilizing the first computing device visual output component. Simultaneously, first computing device transceiver 204 retrieves audio alert data 2302 from the first computing device data storage 208 and transmits it to the aural device transceiver 804. The aural device first and second speakers 805a and 805b, outputs the audio signal determined from the audio alert data 2302.

[0091] Upon receipt of data corresponding to the selection of the "Yes" button on the dual channel composite audio initiation command 2004 through the user interface, transmission of the data corresponding to the selection of the "Yes" button occurs from the first computing device 200 to the host server 300 with the first computing device transceiver 204 transmitting the data corresponding to the selection of the "Yes" button to the host server transceiver 304 and host server transceiver 304 transmitting data corresponding to the selection of the "Yes" button to the host server 300. Subsequently, the host server processor 302 either generates a new dual-channel composite audio file and stores it in the host server data storage 308 under the user repository data table 1702 or retrieves an existing dual-channel composite audio file from the host server data storage 308. The host server transceiver 304 transmits the data contained in this dual-channel composite audio file to the first computing device transceiver 204 which subsequently transmits the data contained in the dual-channel composite audio file to the aural device 800 through the aural device transceiver 704. The aural device speakers 805a and 805b convert the data contained in dual-channel composite audio file to an audio signal. Subsequently, the aural device speakers 805a, 805b emit audio signals in such a way that the audio signal originating from the first channel is selectively routed to either the wearable device's first speaker or its second speaker, while the audio signal originating from the second channel is directed to the alternate speaker.

[0092] In one embodiment of the present invention, the wearable tracker device 700 is multifunctional wearable device incorporating timekeeping capabilities alongside computing functionalities, featuring a display screen and interactive interface and has a heartbeat sensor, commonly known as a 'smartwatch'.

[0093] In another embodiment of the present invention, the wearable tracker device 700 is a wearable fitness tracking device comprising sensors for monitoring physical activity, biometric data, sensors for measuring heartbeat and providing feedback to users. For example, a FitBit.

[0094] In one embodiment of the present invention, the aural device 800 comprises headphones configured to envelop the user's ears, comprising a minimum of two earpieces.

[0095] In an alternate embodiment of the present invention, the aural device 800 comprises earbuds, with two earpieces intended for insertion into the user's ear canal.

[0096] In an alternate embodiment of the present invention, the aural device 800 is but not limited to Jabra Elite Sports Earbuds, Bose SoundSport Pulse, Philip Action Fit.

[0097] Figure 3 illustrates system 1015 according to an embodiment of the present invention.

[0098] The present embodiment is similar to the embodiment described in Figure 1 except that this embodiment does not have the wearable device 100. Instead, this embodiment includes a wearable fitness monitoring device 1000, and an Aural Device 800.

[0099] The wearable fitness monitoring device 1000 comprises of a wearable fitness monitoring device heartbeat sensor 1001, wearable fitness monitoring device processor 1002, a wearable fitness monitoring device analog to digital converter 1003, a wearable fitness monitoring device transceiver 1004, a wearable fitness monitoring device system clock 1005, a wearable fitness monitoring device power supply 1006 and a wearable fitness tracker speaker 1011.

[00100] The aural device 800 includes an aural device processor 802, an aural device transceiver 804, an aural device first speaker 805a, an aural device second speaker 805b and an aural device power supply 806.

[00101] The wearable fitness monitoring device power supply 1006 supplies power to all components in wearable fitness monitoring device 1000. The wearable device fitness device processor 1002 is in electronic data communication with wearable fitness monitoring device heartbeat sensor 1001, wearable fitness monitoring device analog to digital converter 1003, wearable fitness monitoring device transceiver 1004, The wearable fitness monitoring device system clock 1005, wearable fitness monitoring device power supply 1006, and wearable fitness monitoring device speaker 1011.

[00102] The wearable fitness monitoring device analog to digital converter 1003 is in electronic data communication with the wearable fitness monitoring device transceiver 1004. The wearable fitness monitoring device transceiver 1004 is in electronic data communication with First Computing Device transceiver 204.

[00103] In addition, the Aural Device processor 802 is in electronic data communication with the Aural Device transceiver 804. The Aural Device first and second speakers 805a and 805b are in electronic data communication with the Aural Device processor 802. The Aural Device power supply 804 supplies power to all components in the Aural Device 800. The Aural Device transceiver 804 is in electronic data communication with host server transceiver 304 and first computing device transceiver 204.

[00104] The wearable fitness device speaker 1011 is an output conduit for transmitting audio signal. The wearable fitness monitoring device system clock 1005 synchronizes temporal operations and regulate data transmission rates.

[00105] The wearable fitness monitoring device transceiver 1004, first computing device transceiver 204, host server transceiver 304, language model server transceiver 401, mixer transceiver 501, text to voice server transceiver 601 can be either a Bluetooth type transceiver, a wireless transceiver, a cellular transceiver, or a wired communication transceiver.

[00106] In operation, the wearable fitness monitoring device heartbeat beat sensor 1001 measures the heartbeat of a user, creates an analog signal of the heartbeat data, and transmits the analog heartbeat signal to the wearable fitness monitoring device processor 1002. The wearable fitness monitoring device analog to digital converter 1003 converts the heartbeat analog signal into digital form for further processing. The wearable fitness monitoring device transceiver 1004 transmits digital heartbeat data to the first computing device transceiver 204 of the first computing device 200.

[00107] The operation of the first computing device 200, host server 300, language model server 400, mixer 500 and text-to voice converter server 600 are described in Figure 1.

[00108] Upon the activation of the alert system when the current HRV data is less than the threshold HRV data, the first computing device transceiver 204 retrieves the audio alert data 2302 and a text alert data 2303, from the first computing device data storage 208, and transmits data from the alert system to various embodiments discussed below.

[00109] In one embodiment, the alert comprises both a visual message and an audio signal, with the text alert data 2303 sent to the first computing device 200 and the audio alert data 2302 sent to the aural device 800. Particularly, the first computing device processor 202 retrieves the text alert data 2303 stored in the first computing device data storage 208 and displays the text determined from the text alert data 2303 it on the first computing device user interface 201 utilizing the first computing device visual output component. Simultaneously, first computing device transceiver 204 retrieves audio alert data 2302 from the first computing device data storage 208 and transmits it to the aural device transceiver 804. The aural device first and second speakers 805a and 805b, outputs the audio signal determined from the audio alert data 2302.

[00110] In another embodiment, the alert comprises both a visual message and an audio signal, with the text alert data 2303 sent to first computing device 200 and the audio alert data 2302 sent to the aural device 800. Particularly, the first computing device processor 202 retrieves the text alert data 2303 stored in the first computing device data storage 208 and displays the text determined from the text alert data 2303 on the first computing device user interface 201 utilizing the first computing device visual output component. Simultaneously, first computing device transceiver 204 retrieves audio alert data 2302 from the first computing device data storage 208 and transmits it to the aural device transceiver 804. The aural device first and second speakers 805a and 805b, outputs the audio signal determined from the audio alert data 2302.

[00111] In another embodiment, the alert comprises both a visual message and an audio signal, with the text alert data 2303 sent to first computing device 200 and the audio alert data 2302 sent to the aural device 800 and wearable fitness monitoring device 1000. Particularly, the first computing device processor 202 retrieves the text alert data 2303 stored in the first computing device data storage 208 and displays the text determined from the text alert data 2303 on the first computing device user interface 201 utilizing the first computing device visual output component. Simultaneously, the first computing device transceiver 204 retrieves audio alert data 2302 from the first computing device data storage 208 and transmits it to the aural device transceiver 804. The aural device first and second speakers 805a and 805b, outputs the audio signal determined from the audio alert data 2302. Additionally, first computing device transceiver 204 retrieves audio alert data 2302 from the first computing device data storage 208 and transmits it to the wearable fitness monitoring device transceiver 1004. The wearable fitness monitoring device speaker 1011 outputs the audio signal determined from the audio alert data 2302.

[00112] Upon receipt of data corresponding to the selection of the "Yes" button on the dual channel composite audio initiation command 2004 through the user interface, transmission of the data corresponding to the selection of the "Yes" button occurs from the first computing device 200 to the host server 300 with the first computing device transceiver 204 transmitting the data corresponding to the selection of the "Yes" button to the host server transceiver 304 and host server transceiver 304 transmitting data corresponding to the selection of the "Yes" button to the host server 300. Subsequently, the host server processor 302 either generates a new dual-channel composite audio file and stores it in the host server data storage 308 under the user repository data table 11002 or retrieves an existing dual-channel composite audio file from the host server data storage 308. The host server transceiver 304 transmits the data contained in this dual-channel composite audio file to the first computing device transceiver 204 which subsequently transmits the data contained in the dual-channel composite audio file to the aural device 800 through the aural device transceiver 1004. The aural device speakers 805a and 805b convert the data contained in dual-channel composite audio file to an audio signal. Subsequently, the aural device speakers 805a, 805b emit audio signals in such a way that the audio signal originating from the first channel is selectively routed to either the wearable device's first speaker or its second speaker, while the audio signal originating from the second channel is directed to the alternate speaker.

[00113] In the present embodiment, the wearable fitness monitoring device incorporates a band structure comprising sensors capable of detecting and measuring heartbeat data, wherein the band structure is designed to be worn around the user's wrist, forearm, or chest for continuous monitoring of cardiovascular activity.

[00114] In one embodiment of the present invention, the aural device 800 comprises headphones configured to envelop the user's ears, comprising a minimum of two earpieces.

[00115] In an alternate embodiment of the present invention, the aural device 800 comprises earbuds, with two earpieces intended for insertion into the user's ear canal.

[00116] In an alternate embodiment of the present invention, the aural device 800 is but not limited to Jabra Elite Sports Earbuds, Bose SoundSport Pulse, Philip Action Fit.

[00117] Figure 4 illustrates system 9000 according to an embodiment of the present invention.

[00118] The present embodiment is similar to the embodiment described in Figure 1 except that this embodiment does not have the wearable device 100. Instead, this embodiment includes a second computing device 900, and an Aural Device 800.

[00119] The second computing device 900 further includes a second computing device user interface 901, a second computing device processor 902, a second computing device system clock 903, a second computing device transceiver 904, a second computing device speaker 905, a second computing device power supply 906, a second computing device HRV calculator 907, a second computing device data storage 908, a second computing device audio output component 909, a second computing device visual output component 910 and a second computing device heartbeat sensor 912.

[00120] The aural device 800 includes an aural device processor 802, an aural device transceiver 804, an aural device second speaker 805a, an aural device second speaker 805b and an aural device power supply 806.

[00121] The second computing device processor 902 is in electronic data communication with Second computing device With sensor User Interface 901, Second computing device System Clock 903, Second computing device Transceiver 904, Second computing device Speaker 905, Second computing device Power Supply 906, Second computing device HRV Calculator 907, Second computing device Data Storage 908, Second computing device Audio Output Component 909, Second computing device Visual Output Component 910 and Second computing device Heartbeat Sensor 912 and

Second computing device ADC 913. The second computing device power supply 906 supplies power to all components of the second computing device 900. The Second computing device Heartbeat Sensor 912 is in electronic data communication with the Second computing device ADC 913. Second computing device HRV Calculator 907 is in electronic data communication with the Second computing device Data Storage 908. The Second computing device Transceiver 904 is in electronic data communication with Second computing device Data Storage 908.

[00122] In addition, the Aural Device processor 802 is in electronic data communication with the Aural Device transceiver 804. The Aural Device first and second speakers 805a and 805b are in electronic data communication with the Aural Device processor 802. The Aural Device power supply 804 supplies power to all components in the Aural Device 800. The Aural Device transceiver 804 is in electronic data communication with host server transceiver 304.

[00123] In operation, the Second computing device Heartbeat Sensor 912 detects and measures the user heartbeat. The Second computing device Heartbeat Sensor 912 creates an analog heartbeat signal and transmits it to the Second computing device ADC 913 which converts the analog heartbeat signal to digital heartbeat data and stores the digital heartbeat data in the second computing device data storage 908. Following this storage process, upon direction from the second computing device processor 902, the heart rate data stored in the second computing device data storage 908 is retrieved and forwarded to the second computing device HRV calculator 907.

[00124] The HRV calculator 907 utilizes standardized algorithms stored within the second computing device data storage 908 to convert the digital heartbeat data into Heart

Rate Variability (HRV) data. Upon completion of the conversion process, the resultant current HRV data is stored in the second computing device data storage 908. The second computing device processor 902 retrieves HRV threshold data stored in the second computing device data storage 908, compares HRV threshold data with the current HRV data stored in the second computing device data storage 908 and initiates appropriate actions if the current HRV data is below the threshold HRV data. If the current HRV data is not below the threshold HRV data, the second computing device processor 902 continues to compare the current HRV data to the HRV threshold data. When the second computing device processor 902 determines that the current HRV data is less than the threshold HRV data, the second computing device processor 902 retrieves instructions from the second computing device data storage 908 to activate the alert system.

[00125] Upon reception of heart beat data from the second computing device heartbeat sensor 912, under the guidance of instructions provided by the second computing device processor 902, received heart rate data is stored in the second computing device data storage 908. Following this storage process, upon direction from the second computing device processor 902, the heart rate data stored in the second computing device data storage 908 is retrieved and forwarded to the second computing device HRV calculator 907. Acting upon instructions from the second computing device processor 902, the second computing device HRV calculator 907 utilizes standardized algorithms stored within the second computing device data storage 908 to convert the heart rate data into Heart Rate Variability (HRV) values. Upon completion of the conversion process, the resultant HRV values are archived within the second computing device data storage 908.

[00126] The activation of the alert system in turn activates retrieval from the second computing device data storage 208 of audio alert data 2302 and text alert data 2303 (shown in Figure 5) that contains the information to be displayed on the second computing device user interface 901 and within the textual file, dual channel composite audio initiation command 2004 which activates the Binaural Beats module 307. The second computing device transceiver 204 upon receiving instructions from the second computing device processor 902 transmits data from the alert system to various embodiments discussed below.

[00127] The alert that is displayed on the second computing device interface is shown in Figure 5.

[00128] In one embodiment, the alert is a visual message sent to the second computing device 900, where the second computing device processor 902 retrieves the text alert data 2303 stored in the second computing device data storage 908 and displays the text determined from the text alert data 2303 on the second computing device user interface 901 utilizing the second computing device visual output component 910.

[00129] In another embodiment, the alert comprises both a visual message and an audio signal sent to the second computing device 900, where the second computing device processor 902 retrieves the text alert data 2303 stored in the second computing device data storage 908 and displays the text determined from the text alert data 2303 on the second computing device user interface 901 utilizing the second computing device visual output component 910. Simultaneously, the second computing device processor 902 retrieves audio alert data 2302 from the second computing device data storage 908 and transmits the audio signal determined from the audio alert data 2302 to the second computing device speaker 905 utilizing the second computing device audio output component 909.

[00130] In another embodiment, the alert comprises both a visual message and an audio signal, with the text alert data 2303 sent to the second computing device 900 and the audio alert data 2302 sent to the aural device 800. Particularly, the second computing device processor 902 retrieves the text alert data 2303 stored in the second computing device data storage 908 and displays the text determined from the text alert data 2303 it on the second computing device user interface 901 utilizing the second computing device visual output component. Simultaneously, second computing device transceiver 904 retrieves audio alert data 2302 from the second computing device data storage 208 and transmits it to the aural device transceiver 804. The aural device second and second speakers 805a and 805b, outputs the audio signal determined from the audio alert data 2302.

[00131] The operation of the host server 300, language model server 400, mixer 500 and text-to voice converter server 600 are described in Figure 1.

[00132] Upon receipt of data corresponding to the selection of the "Yes" button on the dual channel composite audio initiation command 2004 through the user interface, transmission of the data corresponding to the selection of the "Yes" button occurs from the second computing device 900 to the host server 300 with the second computing device transceiver 904 transmitting the data corresponding to the selection of the "Yes" button to the host server transceiver 304 and host server transceiver 304 transmitting data corresponding to the selection of the "Yes" button to the host server 300. Subsequently, the host server processor 302 either generates a new dual-channel composite audio file and stores it in the host server data storage 308 under the user repository data table 1702 or retrieves an existing dual-channel composite audio file from the host server data storage 308. The host server transceiver 304 transmits the data contained in this dual-channel composite audio file to the second computing device transceiver 904 which subsequently transmits the data contained in the dual-channel composite audio file to the aural device 800 through the aural device transceiver 704. The aural device speakers 805a and 805b convert the data contained in dual-channel composite audio file to an audio signal. Subsequently, the aural device speakers 805a, 805b emit audio signals in such a way that the audio signal originating from the first channel is selectively routed to either the wearable device's first speaker or its second speaker, while the audio signal originating from the second channel is directed to the alternate speaker.

[00133] In one embodiment of the present invention, the second computing device 900 is a handheld communication and computing device with telephony features like a smartphone which is also equipped with a heartbeat sensor.

[00134] In one embodiment of the present invention, the aural device 800 comprises headphones configured to envelop the user's ears, comprising a minimum of two earpieces.

[00135] In an alternate embodiment of the present invention, the aural device 800 comprises earbuds, with two earpieces intended for insertion into the user's ear canal.

[00136] In an alternate embodiment of the present invention, the aural device 800 is but not limited to Jabra Elite Sports Earbuds, Bose SoundSport Pulse, Philip Action Fit.

[00137] Figure 5 illustrates an user interface presented to the user for display of alert according to an embodiment of the present invention

[00138] The embodiment shows the user interface 2000 which is an alert screen that is activated upon detecting the user's Heart Rate Variability (HRV) dipping below a predefined HRV threshold.

[00139] The detailed workflow for generating, transmitting, and displaying this alert is elucidated in Figure 9. The alert screen 2000 comprises various elements including current HRV display field 2001, HRV threshold display field 2002, stress alert indication field 2003 and dual channel composite audio initiation command 2004.

[00140] In one embodiment, the current HRV data and corresponding threshold values, displayed on this screen are retrieved from the first computing device data storage 208, particularly from the HRV data table 2301 and HRV threshold data table 2306.

[00141] In another embodiment, the current HRV data and corresponding threshold values, displayed on this screen are retrieved from the second computing device data storage 908, particularly from the HRV data table 9301 and HRV threshold data table 9306.

[00142] In one embodiment user interface 2000 is the first computing device user interface 201.

[00143] In another embodiment user interface 2000 is the second computing device user interface 901.

[00144] In one embodiment, when the first computing device processor 202 determines that the current HRV data is less than the threshold HRV data, the first computing device processor 202 retrieves instructions from the first computing device data storage 208 to activate the alert system. Upon activation of the alert system, first computing device processor 202 retrieves current HRV and HRV threshold data from the first computing device data storage 208 and places it in the text alert data 2303. Within the text alert data file, dual channel composite audio initiation command 2004 which activates the Binaural Beats module 307 is also present. Subsequently, first computing device processor 202 retrieves the text alert data 2303 stored in the first computing device data storage 208 and displays the text determined from the text alert data 2303 on the first computing device user interface 201 utilizing the first computing device visual output component 210.

[00145] In another embodiment, when the second computing device processor 902 determines that the current HRV data is less than the threshold HRV data, the second computing device processor 902 retrieves instructions from the second computing device data storage 908 to activate the alert system. Upon activation of the alert system, second computing device processor 902 retrieves current HRV and HRV threshold data from the second computing device data storage 908 and places it in the text alert data 2303. Within the text alert data file, dual channel composite audio initiation command 2004 which activates the Binaural Beats module 307 is also present. Subsequently, second computing device processor 902 retrieves the text alert data 2303 stored in the second computing device data storage 908 and displays the text determined from the text alert data 2303 on the second computing device user interface 901 utilizing the second computing device visual output component 910.

[00146] Figure 6 illustrates a user interface presented to the user upon receipt of data corresponding to the selection of the "Yes" button on the dual channel composite audio initiation command 2004 through the user interface.

[00147] Each input and output field represents data that is stored in the user profile data table. Data input fields include a “start/stop” button 2101 for activating dual channel composite audio data delivery, a dual channel composite audio file name 2102, a stress monitor “On/Off” button 2105, a threshold HRV data field 2106, an "On/Off' button for activating hourly HRV targets 2107, an heart beat sensor connection field 2108, a button to construct a new dual channel composite audio file 2109, and a "History" button 2110. The data output fields include a listen time field 2103, previous HRV data and current HRV data field 2104.

[00148] The "start/stop" button 2101 represents the field selected by the user whether to start streaming the dual channel composite audio file.

[00149] Dual channel composite audio file name 2102 is the name of the dual channel composite audio file. In the preferred embodiment, the Dual channel composite audio file name 2102 is in string format. The "On/Off' button 2105 represents the field selected by the user whether to continue to monitor HRV data. The threshold HRV data field 2106 represents the threshold data set by the user.

[00150] In preferred embodiment, the threshold HRV data field 706 is in integer format. The "On/Off' button for activating hourly HRV targets 2107 represents the field selected by the user whether to update the HRV threshold data every hour. Heart beat sensor connection field 2108 represents the device name that has the heartbeat sensor. It is either wearable device 100 or wearable fitness tracker device 700 or wearable fitness monitoring device 800 or second computing device 900 depending on the embodiment.

[00151] Button 2109 to construct a new dual-channel composite audio file brings up a user interface to create a new dual-channel composite audio file which is further discussed in Figure 7.

[00152] The "History" button 2110 represents the user's selection to be directed to the user interface, further detailed in Figure 8.

[00153] Listen time output field 2103 displays the elapsed time since the user started streaming the dual channel composite audio file to their auditory device. In preferred embodiment, the listen time output field 2103 is in hours, minutes, and seconds format.

[00154] Previous HRV data and current HRV data field 2104 represents HRV data measured at the initial streaming time and the HRV data measured at current instance.

[00155] In operation, in one embodiment, the host server processor 302 retrieves the names of the First user first dual channel composite audio file data 1730 from the host server data storage and transmits it to the host server transceiver 304. The host server transceiver 304 transmits the names of the First user first dual channel composite audio file data 1730 to the first computing device transceiver 204. The first computing device processor 202 then displays the names of the First user first dual channel composite audio file data 1730 in a dropdown menu on the user interface. In particular, the names of the First user first dual channel composite audio file data 1730 is displayed in dual channel composite audio file name 2102. When data is received at the user interface representing selection, the first computing device transceiver 204 transmits data representing selection to the host server transceiver 304. The host server processor 304 upon receiving data representing selection, navigates to the particular user's profile in host server data storage 308 and retrieves the First user first dual channel composite audio file data 1730 associated with that particular name. The host server transceiver 304 transmits First user first dual channel composite audio file data 1730 to first computing device transceiver 204. The first computing device transceiver 204 transmits the First user first dual channel composite audio file data 1730 to wearable device transceiver 104. The wearable device speakers 105a and 105b convert the data in First user first dual channel composite audio file data 1730 to an audio signal and streams the audio signal.

[00156] In operation, in another embodiment, the host server processor 302 retrieves the names of the First user first dual channel composite audio file data 1730 from the host server data storage and transmits it to the host server transceiver 304. The host server transceiver 304 transmits the names of the First user first dual channel composite audio file data 1730 to the first computing device transceiver 204. The first computing device processor 202 then displays the names of the First user first dual channel composite audio file data 1730 in a dropdown menu on the user interface 201. In particular, the names of the First user first dual channel composite audio file data 1730 is displayed in dual channel composite audio file name 2102. When data is received at the user interface representing selection, the first computing device transceiver 204 transmits data representing selection to the host server transceiver 304. The host server processor 304 upon receiving data representing selection, navigates to the particular user's profile in host server data storage 308 and retrieves the First user first dual channel composite audio file data 1730 associated with that particular name. The host server transceiver 304 transmits First user first dual channel composite audio file data 1730 to first computing device transceiver 204. The first computing device transceiver 204 transmits the First user first dual channel composite audio file data 1730 to aural transceiver 804. The aural device speakers 805a and 805b convert the data in First user first dual channel composite audio file data 1730 to an audio signal and streams the audio signal.

[00157] In operation, in another embodiment, the host server processor 302 retrieves the names of the First user first dual channel composite audio file data 1730 from the host server data storage and transmits it to the host server transceiver 304. The host server transceiver 304 transmits the names of the First user first dual channel composite audio file data 1730 to the second computing device transceiver 904. The second computing device processor 902 then displays the names of the First user first dual channel composite audio file data 1730 in a dropdown menu on the user interface 901. In particular, the names of the First user first dual channel composite audio file data 1730 is displayed in dual channel composite audio file name 2102. When data is received at the user interface representing selection, the second computing device transceiver 904 transmits data representing selection to the host server transceiver 304. The host server processor 304 upon receiving data representing selection, navigates to the particular user's profile in host server data storage 308 and retrieves the First user first dual channel composite audio file data 1730 associated with that particular name. The host server transceiver 304 transmits First user first dual channel composite audio file data 1730 to second computing device transceiver 904. The second computing device transceiver 904 transmits the First user first dual channel composite audio file data 1730 to aural transceiver 804. The aural device speakers 805a and 805b convert the data in First user first dual channel composite audio file data 1730 to an audio signal and streams the audio signal.

[00158] In operation, in one embodiment, when streaming of audio signal commences, the first computing device processor 202 retrieves the time from the first computing device system clock 203 and calculates the listen time as the time elapsed from the time the streaming of the audio signal first began till present time and displays it in Listen time output field 2103.

[00159] In operation, in another embodiment, when streaming of audio signal commences, the second computing device processor 902 retrieves the time from the second computing device system clock 903 and calculates the listen time as the time elapsed from the time the streaming of the audio signal first began till present time and displays it in Listen time output field 2103.

[00160] In operation, in one embodiment, the first computing device processor 202 retrieves the HRV data value 1 2307 at the time the streaming of the audio signal first began till present time and the current HRV value, HRV data value 1 2307 and displays it in previous HRV data field 2104.

[00161] In operation, in another embodiment, the second computing device processor 902 retrieves the HRV data value 1 2507 at the time the streaming of the audio signal first began till present time and the current HRV value, HRV data value 1 2507 and displays it in previous HRV data and current HRV data field 2104.

[00162] In operation, upon receipt of the data corresponding to "on" of the stress monitor "on/off' button 2105, a textual alert or a textual and audio alert is transmitted when the current HRV, HRV value 1 2307 is lower than the HRV threshold value 1 2309 (as discussed in Figures 1, Figure 2, Figure 3 and Figure 4).

[00163] In operation, upon receipt of the data corresponding to "on" of the stress monitor "on/off' button 2105, a textual alert or a textual and audio alert is transmitted when the current HRV, HRV value 1 2507 is lower than the HRV threshold value 1 2509 (as discussed in Figures 1, Figure 2, Figure 3 and Figure 4).

[00164] The user uses the up and down arrow to input an integer value in increments from 20 to 100 into the threshold HRV data field 2106.

[00165] In operation, in one embodiment of the present invention, once HRV threshold data is received on the user interface, the first computing device processor 202 transmits HRV threshold value 1 2309 to the first computing device transceiver 204. The first computing device transceiver 204 transmits HRV threshold value 1 2309 to host server transceiver 304. The host server transceiver 304 transmits HRV threshold value 1 2309 to host server processor 302. The host server processor 302 stores HRV threshold value 1 2309 as First user HRV threshold value 1 1715.

[00166] In operation, in another embodiment of the present invention, once HRV threshold data is received on the user interface, the second computing device processor 902 transmits HRV threshold value 1 2509 to the second computing device transceiver 904. The second computing device transceiver 904 transmits HRV threshold value 1 2509 to host server transceiver 304. The host server transceiver 304 transmits HRV threshold value 1 2509 to host server processor 302.

[00167] The host server processor 302 stores HRV threshold value 1 2509 as First user HRV threshold value 1 1715.

[00168] Figure 7A illustrates a user interface presented to the user when the user wants to customize their choices for creating a dual-component composite audio file according to an embodiment of the present invention.

[00169] The method and the operational workflow for creating a new dual-component composite audio file is discussed in Figures 10A and 10B.

[00170] The embodiment includes a user interface 2200, accessible when users opt to create a new dual-channel composite audio file by initiating the "Construct a New SoundPackage" by clicking the button to construct a new dual-channel composite audio file 2109 as illustrated in Figure 5. This interface comprises several input data fields for the configuration of the audio file.

[00171] An informational banner 2202 displays data that indicates that a section has been made to construct a SoundPackage.

[00172] The host server processor 302 generates a default name based on a standard algorithm stored in the host server data storage 308 where the default name displayed in sound package name field 2203 follows a naming convention based on the current year, month, date, and a numeric identifier representing the file number generated by the host server 300 in that particular year.

[00173] Once the host server processor 302 has created a default name for the dual channel composite audio file, the host server host server processor 302 transmits this to the host server transceiver 304. The host server transceiver 304 in turn transmits default name to the user interface 2200 either through a first computing device transceiver 204 or a second computing device transceiver 904 depending on the embodiment. The first computing device transceiver 204 or a second computing device transceiver 904 transmits default name to first computing device processor 202 or the second computing device processor 902. The first computing device processor 202 or the second computing device processor 902 displays default name in name field 2203 on the first user interface 201 or second user interface 901.

[00174] Users can change the default name in sound package name field 2203 displayed in the name field by selecting the "Rename" button in sound package name field 2203 and typing in the name in alphanumeric format. For example, the default name in sound package name field 2203 can be highlighted and becomes editable, and the user can enter the new name by typing into the sound package name field 2203.

[00175] Base tone data field 2204 represents an input data field where the user interface receives base tone frequency data. Users can adjust the base tone in base tone data field 2204 by using up or down arrows.

[00176] In one embodiment, the default frequency for the base tone is 432 Hz. This default frequency value is initially displayed in the base tone data field 2204.

[00177] In another embodiment, users have the flexibility to customize the base tone within the range of 100 Hz to 800 Hz using the up or down arrows in the base tone data field 2204.

[00178] Beat tone data field 2205 represents an input data field where the user interface receives beat tone frequency data. Users can adjust the beat tone in beat tone data field 2205 by using up or down arrows.

[00179] In one embodiment, default frequency of 10 Hz utilized for the beat tone. This default frequency value is initially displayed in the beat tone data field 2205.

[00180] In another embodiment, users have the option to customize the beat tone within the range of 4 Hz to 13 Hz using the up or down arrows in the beat tone data field 2205.

[00181] In another embodiment, users have the option to customize the beat tone within the range of 0 Hz to 30 Hz using the up or down arrows in the base tone data field 2205.

[00182] Overlay "On/Off" button 2206 represents an input data field where the user interface receives data regarding the overlay selection.

[00183] When the user interface receives data corresponding to "on" in Overlay "On/Off" button 2206, overlay category input data field 2207 and overlay name input data field 2208 and overlay emphasis input data field are enabled which allows for the input data to be received in these input data fields.

[00184] When the user interface receives data corresponding to "off" in Overlay "On/Off" button 2206, overlay category input data field 2207 and overlay name input data field 2208 and overlay emphasis input data field are disabled.

[00185] Overlay category input data field 2207 represents an input data field where the user interface receives data corresponding to category of overlay. Users can select from different overlay categories using the drop down menu in Overlay category input data field 2207.

[00186] Overlay name input data field 2208 represents an input data field where the user interface receives data corresponding to a particular overlay audio file. Users can select from different audio files using the drop down menu in Overlay name input data field 2208.

[00187] Overlay emphasis input data field 2209 represents an input data field where the user interface receives data corresponding to overlay emphasis. A default overlay emphasis is displayed initially but users can adjust the overlay emphasis in Overlay emphasis input data field 2209 by using up or down arrows.

[00188] In one embodiment, the default overlay emphasis is 200.

[00189] In another embodiment, the default Overlay emphasis is set to twice the amplitude of the Base Tone.

[00190] In another embodiment, the default overlay emphasis is set to twice the amplitude of the Beat Tone.

[00191] Background "On/Off" button 2210 represents an input data field where the user interface receives data regarding the Background audio selection.

[00192] When the user interface receives data corresponding to "on" in Background "On/Off" button 2210, Background name input data field 2211 and Background emphasis input data field are enabled which allows for the input data to be received in these input data fields.

[00193] When the user interface receives data corresponding to "off" in Background "On/Off" button 2210, Background name input data field 2211 and Background emphasis input data field are disabled.

[00194] Background name input data field 2211 represents an input data field where the user interface receives data corresponding to a particular Background audio file. Users can select from different audio files using the drop down menu in Background name input data field 2211.

[00195] Background emphasis input data field 2212 represents an input data field where the user interface receives data corresponding to Background emphasis. A default Background emphasis is displayed initially but users can adjust the Background emphasis in Background emphasis input data field 2212 by using up or down arrows.

[00196] In one embodiment, default Background emphasis is 30.

[00197] Affirmation "On/Off" button 2213 represents an input data field where the user interface receives data regarding the Affirmation selection.

[00198] When the user interface receives data corresponding to "on" in Affirmation "On/Off" button 2213, Affirmation category input data field 2214 and Affirmation name input data field 2215 and Affirmation emphasis input data field 2216 are enabled which allows for the input data to be received in these input data fields.

[00199] When the user interface receives data corresponding to "off" in Affirmation "On/Off" button 2213, Affirmation category input data field 2214 and Affirmation name input data field 2215 and Affirmation emphasis input data field 2216 are disabled.

[00200] Affirmation category input data field 2214 represents an input data field where the user interface receives data corresponding to category of Affirmation. Users can select from different Affirmation categories using the drop-down menu in Affirmation category input data field 2214.

[00201] When input corresponding to "AI Generated" is received in Affirmation category input data field 2214, additional user interface is provided in a pop-up screen detailed in figure 7b.

[00202] Affirmation name input data field 2215 represents an input data field where the user interface receives data corresponding to a particular Affirmation audio file. Users can select from different audio files using the drop-down menu in Affirmation name input data field 2215.

[00203] Affirmation emphasis input data field 2216 represents an input data field where the user interface receives data corresponding to Affirmation emphasis. A default Affirmation emphasis is displayed initially but users can adjust the Affirmation emphasis in Affirmation emphasis input data field 2216 by using up or down arrows.

[00204] In one embodiment, the default Affirmation emphasis is 50.

[00205] Upon receiving the data corresponding to the selection "Save" button on the sound package name field 2203, all the customization details are stored in the user repository data table 1702.

[00206] Upon receipt of data on the user interface 2200 to create a new dual-channel composite audio file, the host server processor 302 retrieves all relevant meta data (default base tone, default beat tone, different categories for the overlays, backgrounds and affirmations, different audio files available under each category, default emphasis for background, overlay and affirmations) from the global data repository table 1792 and makes it available to the user interface 2200.

[00207] In particular, in one embodiment, when data corresponding to clicking of the button to construct a new dual channel composite audio file 2109 is received on the user interface 2100, the first computing device processor 202 displays user interface 2200 on the first computing device user interface 201. Simultaneously, the first computing device processor 202 transmits data corresponding to clicking of the button to construct a new dual channel composite audio file 2109 to first computing device transceiver 204. The first computing device transceiver 204 transmits this data to the host server transceiver 304. The host server transceiver 304 transmits this data to host server processor 302. The host server processor 302 retrieves the metadata associated with the categories for background (from background category data file 1808), overlay (from overlay category data file 1809), and affirmations (from affirmation category data file 1811), and the metadata associated with the underlying audio files (from background audio data files 1801, overlay audio data files 1803, affirmation audio data files 1805) in each category from the global data repository table 1792 and transmits it to the host server transceiver 304. Simultaneously, host server processor 302 also retrieves the data corresponding to default Background emphasis (from background default emphasis data files 1802), default Overlay emphasis (from overlay default emphasis data files 1804), default Affirmation emphasis (from Affirmation default emphasis data files 1806), default base tone data (from Global base tone data files 1820), default beat tone data (from Global beat tone data files 1830) and transmits it to the host server transceiver 304.

[00208] The host server transceiver 304 transmits the metadata associated with the categories for background, overlay, and affirmations, the metadata associated with the underlying files in each category, data corresponding to default Background emphasis, default Overlay emphasis, default Affirmation emphasis, default base tone data, default beat tone data to the first computing device transceiver 204. The first computing device transceiver 204 transmits the metadata associated with the categories for background, overlay, and affirmations, the metadata associated with the underlying files in each category, data corresponding to default Background emphasis, default Overlay emphasis, default Affirmation emphasis, default base tone data, default beat tone data to the first computing device processor 202. The first computing device processor 202 displays metadata associated with the categories for background, overlay, and affirmations, the metadata associated with the underlying files in each category, data corresponding to default Background emphasis, default Overlay emphasis, default Affirmation emphasis, default base tone data, default beat tone data on the first computer user interface 201.

[00209] In particular, in another embodiment, when data corresponding to clicking of the button to construct a new dual channel composite audio file 2109 is received on the user interface 2100, the second computing device processor 902 displays user interface 2200 on the second computing device user interface 901. Simultaneously, the second computing device processor 902 transmits data corresponding to clicking of the button to construct a new dual channel composite audio file 2109 to second computing device transceiver 904. The second computing device transceiver 904 transmits this data to the host server transceiver 304. The host server transceiver 304 transmits this data to host server processor 302. The host server processor 302 retrieves the metadata associated with the categories for background (from background category file 1809), overlay (from overlay category file 1809), and affirmations (from affirmation category file 1811), and the metadata associated with the underlying audio files (from background audio data files 1801, overlay audio data files 1803, affirmation audio data files 1805) in each category from the global data repository table 1792 and transmits it to the host server transceiver 304. Simultaneously, host server processor 302 also retrieves the data corresponding to default Background emphasis (from background default emphasis data files 1802), default Overlay emphasis (from overlay default emphasis data files 1804), default Affirmation emphasis (from Affirmation default emphasis data files 1806), default base tone data (from Global base tone data files 1820), default beat tone data (from Global beat tone data files 1830) and transmits it to the host server transceiver 304.

[00210] The host server transceiver 304 transmits the metadata associated with the categories for background, overlay, and affirmations, the metadata associated with the underlying files in each category, data corresponding to default Background emphasis, default Overlay emphasis, default Affirmation emphasis, default base tone data, default beat tone data to the second computing device transceiver 904. The second computing device transceiver 904 transmits the metadata associated with the categories for background, overlay, and affirmations, the metadata associated with the underlying files in each category, data corresponding to default Background emphasis, default Overlay emphasis, default Affirmation emphasis, default base tone data, default beat tone data to the second computing device processor 902. The second computing device processor 902 displays metadata associated with the categories for background, overlay, and affirmations, the metadata associated with the underlying files in each category, data corresponding to default Background emphasis, default Overlay emphasis, default Affirmation emphasis, default base tone data, default beat tone data on the second computer user interface 901.

[00211] Upon receiving the data corresponding to the selection "Save" button on the sound package name field 2203, all the customization details are stored in the user repository data table 1702.

[00212] In particular, upon receipt of data corresponding to the selection "Save" button on the sound package name field 2203, depending on the embodiment either the first computing device processor 202 or the second computing device processor 902 transmits metadata from all the input fields on this interface (input data from Base tone data field 2204, Beat tone data field 2205, Overlay category input data field 2207, Overlay name input data field 2208, Overlay emphasis input data field 2209, Background name input data field 2211, Background emphasis input data field 2212, Affirmation category input data field 2214, Affirmation name input data field 2215, Affirmation emphasis input data field 2216) to first computing device transceiver 204 or the second computing device transceiver 904.

[00213] The first computing device transceiver 204 or second computing device transceiver 904 transmits metadata from all the input fields on this interface (input data from Base tone data field 2204, Beat tone data field 2205, Overlay category input data field 2207, Overlay name input data field 2208, Overlay emphasis input data field 2209, Background name input data field 2211, Background emphasis input data field 2212, Affirmation category input data field 2214, Affirmation name input data field 2215, Affirmation emphasis input data field 2216) to host server transceiver 304.

[00214] The host server transceiver 304 transmits metadata from all the input fields on this interface (input data from Base tone data field 2204, Beat tone data field 2205, Overlay category input data field 2207, Overlay name input data field 2208, Overlay emphasis input data field 2209, Background name input data field 2211, Background emphasis input data field 2212, Affirmation category input data field 2214, Affirmation name input data field 2215, Affirmation emphasis input data field 2216) to host server processor 302.

[00215] Subsequently, the host server processor 302 retrieves the particular files corresponding to the metadata from the global data repository 1972 and stores the particular files corresponding to the metadata in first user profile data table 1703. In particular, data received from Base tone data field 2204 is stored in First user first base tone data 1732. Data received from Beat tone data field 2205 is stored in First user first beat tone data 1734. Data received from Overlay category input data field 2207 is stored in First user overlay category data1 17200. Data received from Overlay name input data field 2208 is stored in First user overlay audio data1 17202. Data received from Overlay emphasis input data field 2209 is stored in First user overlay emphasis data 1 1725. Data received from Background name input data field 2211 is stored in First user background audio data 1 17204. Data received from Background emphasis input data field 2212 is stored in First user background emphasis data 1 1728. Data received from Affirmation category input data field 2214 is stored in First user affirmation category data 1 17206. Data received from Affirmation name input data field 2215 is stored in First user first affirmation name data 1742. Data received from Affirmation emphasis input data field 2216 is stored in First user first affirmation emphasis data 1746.

[00216] Figure 7B illustrates a user interface presented to the user when the user wants to customize their choices for creating affirmations according to an embodiment of the present invention.

[00217] The embodiment shows a user interface 2200 when input corresponding to "AI Generated" is received in Affirmation category input data field 2214 as illustrated in Figure 7A.

[00218] The user interface includes everything from the affirmation data input fields described in Figure 7A and in addition includes Affirmation voice input data field 2217 and an additional affirmation choice field 2218 for users to input their own affirmations.

[00219] Affirmations are speech-based and can be customized and added to the sound package. By using the dropdown menu in Affirmation name input data field 2215, users can either select a previously created AI affirmation stored in the user repository table within the host server data storage 308 or create a new one.

[00220] Upon receiving data corresponding to selection of "New" from the Affirmation name input data field 2215, an additional text box affirmation choice field 2218 is displayed which is the user interface to receive textual data corresponding to user typing in their preferred affirmation.

[00221] Affirmation voice input data field 2217 is an input field where users can choose between a male or female voice for the affirmation.

[00222] In operation, upon receiving data corresponding to selection of "New" from the Affirmation name input data field 2215, depending on the embodiment, either the first computing device processor 202 or second computing device processor 902 transmits this to either first computing device transceiver 204 or second computing device transceiver 904. The first computing device transceiver 204 or second computing device transceiver 904 transmits this data to the host server transceiver 304. The host server transceiver 304 transmits this data to host server processor 302.

[00223] The host server processor 302 retrieves the metadata associated with the Affirmations voice audio data files from the global data repository table 1792 (from Affirmations voice audio data files 1807) and transmits the metadata associated with the Affirmations voice audio data files from the global data repository table 1792 (from Affirmations voice audio data files 1807) to the host server transceiver 304 which subsequently transmits the metadata associated with the Affirmations voice audio data files from the global data repository table 1792 (from Affirmations voice audio data files 1807) to the first computing device transceiver 204 or second computing device transceiver 904. The first computing device transceiver 204 or second computing device transceiver 904 transmits the metadata associated with the Affirmations voice audio data files from the global data repository table 1792 (from Affirmations voice audio data files 1807) to either the first computing device processor 202 or second computing device processor 902.

[00224] First computing device processor 202 or second computing device processor 902 displays the metadata associated with the Affirmations voice audio data files from the global data repository table 1792 (from Affirmations voice audio data files 1807) in the dropdown menu in the Affirmation voice input data field 2217.

[00225] Upon receipt of data from affirmation choice field 2218, Affirmation voice input data field 2217, and Affirmation emphasis input data field 2216 (described in figure 7A) from the user interface, depending on the embodiment, either the first computing device processor 202 or the second computing device processor 902 transmits data from affirmation choice field 2218, Affirmation voice input data field 2217, and Affirmation emphasis input data field 2216 (described in figure 7A) to the first computing device transceiver 204 or second computing device transceiver 904 .

[00226] The first computing device transceiver 204 or second computing device transceiver 904 transmits data from affirmation choice field 2218, Affirmation voice input data field 2217, and Affirmation emphasis input data field 2216 (described in figure 7A) to the host server transceiver 304. The host server transceiver 304 transmits data from affirmation choice field 2218, Affirmation voice input data field 2217, and Affirmation emphasis input data field 2216 (described in figure 7A) to the host server processor 302. The host server processor 302 subsequently stores this in the user repository data table 1703 within the user affirmation data table 1722. In particular, data received from affirmation choice field 2218 are stored in are stored under the first user's first textbox input data 1736. Data received from Affirmation voice input data field 2217 is stored in First user first affirmation voice data 1744.

[00227] The data stored in first user's first textbox input data 1736 is transmitted to the language model server 400 to generate various affirmations text messages. The language model affirmation generation workflow is further detailed in Figure 10B.

[00228] In one embodiment, the user's desire to create a new affirmation is transmitted to the host server transceiver 304 through the first computing device transceiver 204. The host server processor 302, then finds the metadata associated with Affirmations voice audio data files from the global data repository table 1792 and the host server transceiver 304 transmits this back to the first computing device transceiver 204 which renders it on the user interface 201. Once users enter their desired affirmation in 2218, select the voice in 2216, and adjust the emphasis in 2217, their selections are transmitted by first computing device transceiver 204 transmitting this information to the host server transceiver 304. The host server processor, 302, upon receiving this information saves it to the host server data storage 308 under the user repository data table 1703 within the user affirmation data table 1722.

[00229] In another embodiment, the user's desire to create a new affirmation is transmitted to the host server transceiver 304 through the second computing device transceiver 904. The host server processor 302, then finds the metadata associated with Affirmations voice audio data files from the global data repository table 1792 and the host server transceiver 304 transmits this back to the second computing device transceiver 904 which renders it on the user interface 901. Once users enter their desired affirmation in 2218, select the voice in 2216, and adjust the emphasis in 2217, their selections are transmitted by second computing device transceiver 904 transmitting this information to the host server transceiver 304. The host server processor, 302, upon receiving this information saves it to the host server data storage 308 under the user repository data table 1703 within the user affirmation data table 1722.

[00230] Figure 8 illustrates a user interface presented to the user when the user requests information regarding the effectiveness of the BeatsTherapy sessions according to an embodiment of the present invention

[00231] The embodiment includes a user interface 2200, accessible when users opt to view their history by clicking on the "History" button 2110 in Figure 7.

[00232] This interface presents a summary of different dual channel composite audio files, including the total streaming time and HRV improvement observed for each file.

[00233] History banner 2201 serves as an informational banner indicating that the displayed data is historical.

[00234] The data fields represented in this interface 2200 are output data fields.

[00235] Sound Package History name field 2202 represents data represented by the names of the different dual-channel audio files that have been streamed in the past. Total time field 2203 represents the total duration of the time the dual-channel audio file was streamed.

[00236] HRV improvement field 2204 represents the difference in the HRV value between what the HRV value was at the start time of the streaming of the dual channel audio file and the end time of the streaming of the dual channel audio file. If the same dual channel audio file is streamed on multiple oocasions, individual occasion field 2205 displays the total time and HRV improvements for individual instances when the dual-channel composite audio file was streamed.

[00237] The user repository database contains a first user history data table 1792, documenting each dual channel composite audio file's name, timestamped starting and ending times, and total streaming duration. If a user plays a particular dual channel composite audio file more than once, each instance is recorded and stored separately.

Additionally, the history file includes HRV improvement values, calculated as illustrated in Figure 11.

[00238] Sound Package History name field 2202 is displayed by retrieving First user first sound package name 17100. Total time field 2203 is displayed by retrieving First user first total duration 17104. HRV improvement field 2204 are displayed by retrieving First user first HRV improvement 17102.

[00239] In particular, in one embodiment when "History" button 2110 is activated by clicking, the first computing device processor 202 transmits data corresponding to history activation to the first computing device transceiver 204. The first computing device transceiver 204 transmits data corresponding to history activation to the host server transceiver 304. The host server transceiver 304 transmits data corresponding to history activation to the host server processor 302. The host server processor 302 then retrieves First user first sound package name 17100, First user first total duration 17104 and First user first HRV improvement 17102 from the first user history table 1792 and transmits it to the host server transceiver 304. The host server transceiver 304 transmits First user first sound package name 17100, First user first total duration 17104 and First user first HRV improvement 17102 to the first computing device transceiver 204. The first computing device transceiver 204 transmits First user first sound package name 17100, First user first total duration 17104 and First user first HRV improvement 17102 to the first computing device processor 202. The first computing device processor 202 displays First user first sound package name 17100, First user first total duration 17104 and First user first HRV improvement 17102 on the first computing device user interface 201.

[00240] In particular, in another embodiment when "History" button 2110 is activated by clicking, the second computing device processor 902 transmits data corresponding to history activation to the second computing device transceiver 904. The second computing device transceiver 904 transmits data corresponding to history activation to the host server transceiver 304. The host server transceiver 304 transmits data corresponding to history activation to the host server processor 302. The host server processor 302 then retrieves First user first sound package name 17100, First user first total duration 17104 and First user first HRV improvement 17102 from the first user history table 1792 and transmits it to the host server transceiver 304. The host server transceiver 304 transmits First user first sound package name 17100, First user first total duration 17104 and First user first HRV improvement 17102 to the second computing device transceiver 904. The second computing device transceiver 904 transmits First user first sound package name 17100, First user first total duration 17104 and First user first HRV improvement 17102 to the second computing device processor 902. The second computing device processor 902 displays First user first sound package name 17100, First user first total duration 17104 and First user first HRV improvement 17102 on the second computing device user interface 901.

[00241] After describing the systems, methods, data flows, and architectures relevant to this disclosure, exemplary workflows are discussed. These workflows demonstrate system-implemented processes carried out by the devices or gadgets described herein, utilizing specially configured components. Each flowchart outlines an exemplary system-implemented process, with blocks representing the individual steps involved. These processes can occur in various sequences and manners, as depicted here.

In some cases, blocks from one process may occur between or simultaneously with those of another process. Furthermore, any process may include some or all of the steps described or depicted, including optional blocks in certain scenarios. Regarding the flowchart illustrations provided, steps from each flowchart may combine, substitute, or undergo other modifications as described herein.

[00242] Figure 9 illustrates a flowchart of a method to provide instructions to calculate heart rate variability (HRV) and send alerts according to an embodiment of the present invention.

[00243] The embodiment shows a workflow 1300 illustrating an example step of a heartbeat sensor-based process for detecting Heart Rate Variability (HRV) in accordance with at least one embodiment of the present disclosure. The processes within this workflow occur across different components of the various embodiments discussed in Figures 1 and 4, in various combinations.

[00244] The process commences with step 1301, wherein the psychological signal is detected. Upon detection of the physiological signal, step 1302 generates analog electrical signals. These analog signals are then converted to digital format in step 1303, followed by transmission to the computing device in step 1304. Step 1305 involves the conversion of the digital signal to HRV values using a standard algorithm and storing them in the computing device storage. Subsequently, in step 1306, the time-stamped HRV values, accompanied by user details, are transmitted to the host server 300. Upon reception, these specific user HRV values are stored in the first user profile data table 1717 within the host server data storage 308. Steps 1301 through 1307 iteratively occur as long as the Binaural Beats module-associated application runs in the background.

[00245] In step 1309, the computing device server processor retrieves the instantaneous HRV values and HRV threshold value stored in computing device memory 208. In step 1310, the instantaneous HRV values undergo comparison with the HRV threshold values. If the instantaneous HRV values fall below the predetermined threshold, step 1311 is initiated by the first computing device processor 204 to alert the user and prompt them to commence the binaural beats therapy as illustrated in figure 5. Conversely, if the instantaneous HRV value exceeds the HRV threshold value, the process returns to step 1301.

[00246] In one embodiment featuring a wearable device 100, first computing device 200, host server 300, and a first user, step of the flowchart 1300 unfolds as described below.

[00247] The process commences with the wearable device heartbeat sensor 101 detecting the physiological signal, specifically the heartbeat, in step 1301, thereby generating an analog electrical heartbeat signal in step 1302. Subsequently, the wearable device analog-to-digital converter 103 converts this analog signal into digital data in step 1303. Following this, in step 1304, the digital heartbeat data is transmitted to the first computing device transceiver 204 through the wearable device transceiver 104. In step 1305, Upon reception, the first computing device processor 202 calculates Heart Rate Variability (HRV) values based on the received data timestamping and storing them in the first computing device storage 208 as HRV value 1 2307.

[00248] Simultaneously, the host server processor 302 upon directions from the host server processor retrieves HRV threshold value First user HRV threshold value 1 1715 stored in the first user HRV threshold data table 1714 and transmits it to the host server transceiver 304. The host server transceiver 304 transmits First user HRV threshold value 1 1715 to the first computing device transceiver 204. The first computing device transceiver 204 transmits First user HRV threshold value 1 1715 to the first computing device processor 202 which then stores it in the first computing device storage 208 as HRV Threshold value 1 2309.

[00249] In step 1309, first computing device processor 202 retrieves the stored HRV value 1 2307 and the HRV Threshold value 1 2309 stored in first computing device storage 208 and evaluates whether the HRV value falls below the user's predefined threshold HRV value. If the HRV value is below the threshold, the first computing device processor 202 retrieves the appropriate alert data from the first computing device storage 208 and displays it on the first computing device user interface 201 through the first computing device visual output component 210.

[00250] In step 1306, the HRV data collected in step 1305, HRV value 1 2307, is transmitted from the first computing device processor 202 to the first computing device transceiver 204. The first computing device transceiver 204 transmits HRV value 1 2307 to the host server transceiver 304. The host server transceiver 304 transmits HRV value 1 2307 to host server processor 302. The host server processor 302 stores HRV value 1 2307 as First user HRV value 1 1718 under the First user profile Data Table 1703 in the host server storage 308.

[00251] In one embodiment, the default HRV threshold is set as the 25th percentile of the last 10 hours of HRV data. Alternatively, another embodiment allows the user to select any percentile of a predetermined time period of HRV data. In this embodiment, the host server processor 302 calculates the 25th percentile of all the HRV data stored for the last 10 hours by retrieving First user HRV value 1 1718, First user HRV value n 1719. The host server processor 302 then stores the 25th percentile as HRV threshold in First user HRV threshold value 1 1715. The host server processor 302 transmits First user HRV threshold value 1 1715 to the host server transceiver 304. The host server transceiver 304 transmits First user HRV threshold value 1 1715 to the first computing device transceiver 204. The first computing device transceiver 204 transmits First user HRV threshold value 1 1715 to the first computing device processor 202. The first computing device processor 202 stores First user HRV threshold value 1 1715 in the first computing device storage as HRV Threshold value 1 2309.

[00252] Another embodiment determines the HRV threshold based on the age of the user. For instance, for users between the ages of 20-30, a HRV threshold of 50 is applied; for ages 30-40, a threshold of 40 is set, and for users over 40, the threshold of 30 is used.

[00253] Alternatively, users in another embodiment have the flexibility to directly input their preferred HRV threshold value through the user interface 2100 using the threshold HRV data field 2106 described in Figure 6

[00254] HRV threshold values in another embodiment may be based on values obtained through guided meditation for a specified period of time. In this embodiment, the first computing device transceiver 204 relays the information to the host server transceiver 304 of the user's choice to calculate HRV threshold based on guided meditation. The host server processor 302, directs the host server transceiver 304 to retrieve instructions data file related to a guided meditation from host server storage 308 under operating instructions 1701 and transmit it to the first computing device transceiver

204. HRV values are collected as the user follows the meditation instructions and stored in First user HRV value 1 1718 and First user HRV value n 1719. The host server processor 302 calculates the average of the First user HRV value 1 1718 and First user HRV value n 1719 and stores the average as First user HRV threshold value 1 1715 which is then used for HRV comparisons in step 1309.

[00255] Figure 10A illustrates a flowchart of a method to provide instructions to create a dual channel composite audio file and deliver it to an electronic device according to an embodiment of the present invention.

[00256] The embodiment shows detailed operational flowchart 1400 outlining the process of creating or obtaining a dual channel composite audio file and transmitting it to the user's auditory equipment. This process involves interactions between components within either the first computing device 100 or the second computing device 900, host server 300, mixer 500 and the wearable device 100 or the aural device 800.

[00257] The user interface associated with this flowchart is shown in Figure 6 and Figure 7.

[00258] In step 1401 data corresponding to when "start" button is pressed on "start/stop" button 2101 is received on the user interface (described in Figure 6). If data corresponding to "stop" is pressed on "start/stop" button 2101, the system remains inactive as shown in 1402.

[00259] If an existing composite audio file is selected in step 1403, the system obtains the name corresponding to existing composite audio file from the user interface. In step 1404, the system matches the name corresponding to existing composite audio file and retrieves the audio file with the same name stored in user repository data table 1702 of the host server. Subsequently, the retrieved audio signal determined from the audio file is delivered to the dual earpiece device in accordance with step 1405.

[00260] If no pre-existing file is selected in step 1403, the system initiates the process of creating a new dual channel composite audio file based on user inputs obtained on the user interface. The minimum requirements for dual channel composite audio file creation include the beat tone data and the base tone data. In step 1406, the system obtains base tone data from the user interface. The system stores base tone data in the user repository table in step 1423.

[00261] In step 1407, the system obtains beat tone data from the user interface. The system stores beat tone data in the user repository table in step 1423.

[00262] If overlay is selected on the user interface in step 1408, in step 1409, the system obtains the metadata corresponding to overlay choice from the user interface. In step 1410, the system obtains the metadata corresponding to overlay file from the user interface. The system searches and retrieves data files corresponding to metadata of the overlay file and the system stores the data files in the user repository table in step 1423. In step 1411, the system obtains data corresponding to overlay emphasis. The system stores overlay emphasis in the user repository table in step 1423.

[00263] If background is selected on the user interface in step 1408, in step 1409, the system obtains the metadata corresponding to background choice from the user interface. In step 1410, the system obtains the metadata corresponding to background file from the user interface. The system searches and retrieves data files corresponding to metadata of the background file and the system stores the data files in the user repository table in step 1423. In step 1411, the system obtains data corresponding to background emphasis. The system stores background emphasis in the user repository table in step 1423.

[00264] When affirmation is selected on the user interface in 1418, if preexisting affirmation is selected on the user interface in step 1419, the system obtains the metadata corresponding to affirmation choice from the user interface in step 1420. The system searches and retrieves data files corresponding to metadata of the affirmation file and the system stores the data files in the user repository table in step 1423. In step 1424, the system obtains data corresponding to affirmation emphasis. The system stores affirmation emphasis in the user repository table in step 1423.

[00265] If no preexisting affirmation is selected on the user interface in step 1419, in step 1421 AI generated affirmation audio file from step 1518 (described in Figure 10B) is retrieved from the storage. The system stores AI generated affirmation audio file in the user repository table in step 1423.

[00266] In step 1429, the system further obtains instructions to be delivered to the mixer and transmits this information along with the stored information from step 1423. Subsequently, the mixer 500 leverages the provided information and instructions to generate a dual-channel composite audio file. In particular, the host server transceiver transmits at least at minimum First user first base tone data 1732 and First user first beat tone data 1734 to the mixer transceiver 501. The mixer transceiver 501 transmits First user first base tone data 1732 and First user first beat tone data 1734 to the to the mixer processor 502. The mixer sound wave generator 505 generates a first sound wave using the first frequency data present in first base tone data 1732 and transmits it to mixer first mono channel. The sound wave generator 505 generates a second sound wave by adding the frequency data present in first base tone data 1732 and First user first beat tone data 1734. This second sound wave data is transmitted to mixer second mono channel 504. The mixer 500 combines the first and second sound wave data into one dual channel composite audio file having data corresponding to two channels. If additional audio files are obtained by the mixer, the mixer mixes it with the dual channel composite audio file and transmits it to the host server 300 through mixer transceiver 501 and host server transceiver 304.

[00267] Other input data files for creation of a dual channel composite audio file may include First user overlay emphasis data 1 1725, First user background emphasis data 1 1728, First user first audio file data 1798a, First user first affirmation emphasis data 1746, First user first text to voice converted audio file data 1740.

[00268] Upon completion of the file generation process, the host server processor 302 retrieves this file in step 1426, saving it under the user repository data table in host server data storage 308 as First user first dual channel composite audio file data 1730. Following storage, the file is extracted from the database and streamed to the user's dual earpiece device, ensuring that audio data from one channel is directed to one earpiece, while audio data from the second channel is routed to the other earpiece.

[00269] In an exemplified embodiment involving a wearable device 100, first computing device 200, host server 300, mixer 500, and a first user, the process for creating a dual channel composite audio file, as described in embodiment 1400, is described below.

[00270] Upon receiving data corresponding to selecting an existing dual-channel composite audio file in step 1401, this data is communicated to the host server 300 through the transceivers. Upon receipt, the host server processor 302 proceeds to query the host server data storage 308 to retrieve the corresponding audio file associated with the input in step 1403. Subsequently, the host server transceiver 304 transmits this file to the wearable device transceiver 104 through the host server network controller 309, which then delivers the dual channel composite audio file to speakers 105a and 105b.

[00271] Alternatively, upon receiving data corresponding to creating a new sound package in step 1403, the process initiates the creation of a new dual channel composite audio file. In step 1406, base tone data, and in step 1407, the beat tone, are transmitted to the host server 300 via the first computing device 200 transceiver 204. Upon receiving data corresponding to overlay selection in step 1408, the host server processor retrieves names of the available audio file names from the global data repository table 1792 and displays it on the first computing device user interface 201.

[00272] If overlay is selected on the user interface in step 1408, in step 1409, the first computing device processor 202 obtains the metadata corresponding to overlay choice from the user interface. In step 1410, the first computing device processor 202 obtains the metadata corresponding to overlay file from the user interface. The first computing device processor 202 transmits the metadata corresponding to overlay file to the first computing device transceiver 204. The first computing device transceiver 204 transmits metadata corresponding to overlay file to the host server transceiver 904 which then relays metadata corresponding to overlay file to the host server processor. The host server processor 302 searches and retrieves data files corresponding to metadata of the overlay file and the system stores the data files in the user repository table in step 1423. In step 1411, the first computing device processor 202 obtains data corresponding to overlay emphasis and transmits it to the host server processor 302 through the first computing device transceiver 204 and host server transceiver 304. The host server processor 302 stores overlay emphasis in the user repository table in step 1423.

[00273] If background is selected on the user interface in step 1413, in step 1417, the first computing device processor 202 obtains the metadata corresponding to background choice from the user interface. In step 1415, the first computing device processor 202 obtains the metadata corresponding to background file from the user interface. The first computing device processor 202 transmits the metadata corresponding to background file to the first computing device transceiver 204. The first computing device transceiver 204 transmits metadata corresponding to background file to the host server transceiver 904 which then relays metadata corresponding to background file to the host server processor. The host server processor 302 searches and retrieves data files corresponding to metadata of the background file and the system stores the data files in the user repository table in step 1423. In step 1417, the first computing device processor 202 obtains data corresponding to background emphasis and transmits it to the host server processor 302 through the first computing device transceiver 204 and host server transceiver 304. The host server processor 302 stores background emphasis in the user repository table in step 1423.

[00274] When affirmation is selected on the user interface in 1418, if preexisting affirmation is selected on the user interface in step 1419, the first computing device processor 202 obtains the metadata corresponding to affirmation choice from the user interface in step 1420 which is transmitted to the host server processor 302 through the first computing device transceiver 204 and host server transceiver 304. The host server processor 302 searches and retrieves data files corresponding to metadata of the affirmation file and the host server processor 302 stores the data files in the user repository table in step 1423. In step 1424, the first computing device processor 202 obtains data corresponding to affirmation emphasis and transmits it to the host server processor 302 through the first computing device transceiver 204 and host server transceiver 304. The host server processor 302 stores affirmation emphasis in the user repository table in step 1423.

[00275] If no preexisting affirmation is selected on the user interface in step 1419, in step 1421 AI generated affirmation audio file from step 1518 (described in Figure 10B) is retrieved from the host server storage 308. The host server processor 302 stores AI generated affirmation audio file in the user repository table in step 1423.

[00276] In step 1429, host server processor 302 further obtains instructions to be delivered to the mixer and transmits this information along with the stored information from step 1423. Subsequently, the mixer 500 leverages the provided information and instructions to generate a dual-channel composite audio file. Upon completion of the file generation process, the host server processor 302 retrieves this file in step 1426, saving it under the user repository data table in host server data storage 308 as First user first dual channel composite audio file data 1730. Finally, the host server transceiver 304 retrieves this dual channel composite audio file and transmits dual channel composite audio file to the first computing device transceiver 204 which in turn transmits dual channel composite audio file to the wearable device transceiver 104 which streams the audio data to the wearable device speakers 105a and 105b, streaming the audio data such that one channel outputs to 105a and the other to 105b.

[00277] In an alternate embodiment, the host server transceiver 304 retrieves this dual channel composite audio file and transmits dual channel composite audio file to the first computing device transceiver 204 which in turn transmits dual channel composite audio file to the aural device transceiver 804 which streams the audio data to the wearable device speakers 805a and 805b, streaming the audio data such that one channel outputs to 805a and the other to 805b.

[00278] In an alternate embodiment, the host server transceiver 304 retrieves this dual channel composite audio file and transmits dual channel composite audio file to the second computing device transceiver 904 which in turn transmits dual channel composite audio file to the aural device transceiver 904 which streams the audio data to the wearable device speakers 805a and 805b, streaming the audio data such that one channel outputs to 805a and the other to 805b.

[00279] In one embodiment, the length of the dual channel composite audio file is 10 minutes.

[00280] In another embodiment, the length of the dual channel composite audio file is 15 minutes.

[00281] Figure 10B illustrates a flowchart of a method to provide instructions to create a customized affirmation file according to an embodiment of the present invention.

[00282] The embodiment shows operational data flowchart 1500 for the AI affirmation workflow within dual channel composite audio file generation, aimed at producing a user-specific affirmation file in a voice chosen by the user. This workflow entails interactions among components within either the first computing device 100 or the second computing device 900, host server 300, language model server 400, and the text-to-voice converter server 600. The user interface associated with this flowchart is depicted in Figure 7B.

[00283] User inputs are facilitated through the user interface of either the first computing device user interface 201 or the second computing device user interface 902. The process begins with operation 1501, where the system initiates by inquiring whether the user has chosen AI affirmation. If the response is negative, the system concludes without further action in accordance with step 1517. However, in the event of an affirmative response, the host server processor 300 prompts the user to input data via the user interface as per step 1502. Subsequently, at operation 1503, the host server processor gathers the requisite information or data.

[00284] At operation 1504, textual data obtained through the user interface 201 is stored in the user repository data table within the host server data storage 308. The host server processor then retrieves this data from the user repository data table and transmits it to the language model server 400 in step 1506. Concurrently, operating instructions for the language model server are retrieved from the host server data storage 308 at operation 1505 and transmitted to the language model server 400 at operation 1507.

[00285] Upon receiving the operational instructions, the language model server generates a textual data file in accordance with the provided instructions. The host server processor retrieves this textual data file in step 1508 and stores it as an affirmation text data file in the user repository data table. An exemplified affirmation text file obtained from the language model server 400 is described in Figure 10C.

[00286] Subsequently, upon receiving instructions from the host server processor, this affirmation text data file is transmitted to the text-to-voice converter server 600 in step 1510.

[00287] Simultaneously, at operation 1515, operational instructions for the text-to-voice converter server are fetched from the host server data storage 308 and transmitted to the text-to-voice converter server 600 in operation 1516. In step 1511, the user is prompted to select a particular voice from a predefined set in which the affirmations will be recited. Upon obtaining the user's preference, the host server processor retrieves the audio file associated with the chosen voice and stores it in the user repository data table in step 1513.

[00288] In one embodiment, the text-to-voice converter server 600 generates 30 textual affirmations.

[00289] In another embodiment, the number of affirmations can be any number less than 1000.

[00290] In another embodiment, the number of affirmations can be set the user through the user interface.

[00291] In step 1514, the host server processor sends instructions to the host server transceiver 304 to transmit this file to the text-to-voice converter server. Upon completion of the conversion process, the text-to-voice converter server converts the text file to an audio file. The host server processor then sends instructions to the host server transceiver 304 to retrieve this affirmation audio data from the text-to-voice converter server in step 1517 and stores it in the host server data storage 308 under the user repository data table in step 1518.

[00292] Finally, the affirmation audio file is delivered to the user upon demand in accordance with step 1421.

[00293] In an exemplified system comprising a first computing device 200, a host server 300, a language model server 400, a text-to-voice converter 600, and a first user, the information flow unfolds as detailed below.

[00294] Initiating upon receiving data corresponding to selection of “New” from the Affirmation name input data field 2215 denoted in step 1502, the first computing device transceiver 204 transmits this data to the host server transceiver 304. Upon reception, the host server 300 stores this information in the First User Affirmation Data Table 1720 under the category "First User First Textbox Input Data 1736." Subsequently, the host server transceiver 304 forwards this data along with instructions to the language model server transceiver 401, as acquired in step 1503. Upon the generation of a text file by the language model server 400 in accordance with the instructions provided, the host server transceiver 304 receives the text file containing the generated text data through the language model server transceiver 401 in step 1508. This data is stored in the First User Affirmation Data Table 1720 under the category "First User First AI Generated Affirmation Text Data 1738."

[00295] Upon reception of data in Affirmation voice input data field 2217 (illustrated in Figure 7B) in step 1511, the first computing device transceiver 204 relays this information to the host server transceiver 304. The host server processor 302 then queries the Global Data Repository Table 1792 to retrieve the corresponding voice associated with the user's selection and stores it in the First User Affirmation Data Table 1720 under the category "First User First Affirmation Voice Data 1744." Subsequently, the host server transceiver 304 transmits this information, along with the text data file generated by the language model server and the instructions for the text-to-voice converter server transceiver 601, as obtained in step 1515. The text-to-voice converter server then proceeds to convert this text data into audio data. In step 1517, the host server transceiver 304 receives this audio data through the text-to-voice converter server transceiver 601, subsequently storing it in step 1518 as "First User First Text-to-Voice Audio Data" within the First User Affirmation Data Table 1720.

[00296] Figure 10C illustrates an example of the AI generated affirmation text data.

[00297] AI generated affirmation text data is generated at the end of step 1508. The data fields are output of the language model server 500 and is the input for text-to-voice converter. The data fields are strings.

[00298] Figure 11 illustrates a flowchart of a method to provide instructions to calculate parameters regarding efficacy of the BeatTherapy session according to an embodiment of the present invention.

[00299] The embodiment shows operational flowchart 1900 elucidating the process of HRV calculations while the dual channel composite audio file is playing. This workflow enables monitoring the user's response to the dual-channel composite audio file by observing improvements in the user's HRV value. And also forms the basis for the values that are displayed in Figure 8.

[00300] This process involves interactions between components within either the first computing device 200 or the second computing device 900, host server 300, and wearable device 100 or wearable fitness monitoring device 1000 or wearable fitness tracker device 700.

[00301] The user interface associated with this flowchart is shown in Figure 8.

[00302] An exemplified workflow including first computing device 200, host server 300, and wearable device 100 is presented below.

[00303] The operational flowchart begins in Step 1901 when "start" is selected in "start/stop" button 2101 for activating dual channel composite audio data delivery. If "stop" is selected in "start/stop" button 2101 for activating dual channel composite audio data delivery, the system remains inactive, as depicted in Step 1921.

[00304] In Step 1902, the system proceeds to retrieve HRV data during a predetermined initial period from the individual user's profile data table. Subsequently, if the system identifies more than one HRV value in Step 1903, the system calculates a central tendency.

[00305] In Step 1904, the system stores the central tendency in the individual user's profile data table as First user first HRV 17106. It then waits for a second predetermined interval of time in Step 1905. Upon completion of this interval, the system retrieves HRV data during another predetermined period from the individual user's profile data table in Step 1906.

[00306] Similarly, if the system identifies more than one HRV value in Step 1907, it calculates a central tendency in Step 1908 and stores it as the First user nth HRV 17106 under the individual user's profile data table. This generates two HRV values.

[00307] In Step 1909, a comparison between the HRV values from Steps 1903 and 1907 occurs. Subsequently, the difference between the HRV values from Steps 1903 and 1907 is calculated in Step 1910. This difference is then stored as first user first HRV improvement 17102 under the individual user's profile data in Step 1911.

[00308] In Step 1912, the system associates the difference calculated in Step 1910 with the name of the dual channel composite audio file initiated by the user in Step 1702. It then checks whether the composite audio file has run longer than a second predetermined duration of time in Step 1913.

[00309] If so, the system retrieves the HRV difference from Step 1908 at time intervals equal to the second predetermined duration of time in Step 1914. Following this, the system calculates a central tendency value in Step 1915 if there are multiple HRV values.

[00310] In Step 1916, the system stores the central tendency value in the user-specific profile data table in the host server data storage 308 as first user nth HRV improvement 17103. It associates the central tendency value obtained in Step 1914 with the name of the dual channel composite audio file initiated by the user in Step 1702 in Step 1917 and stores it as First user first sound package name 17100.

[00311] Following that, in Step 1918, the system computes the total duration of the playback for the dual channel composite audio file utilizing the first computing device system clock 203 within the first computing device 200. Subsequently, this total duration value is stored in the user-specific profile data table in the host server data storage 308 in Step 1919, specifically under the First User History Data Table 1792 as First user first total duration 17104.

[00312] Finally, in Step 1920, the system displays any of the stored information under the user profile data 1703 in the host server data storage 308 on the user interface of either first computing device 200 or the second computing device 900 utilizing the visual output component of the respective device.

[00313] In one embodiment, the predetermined initial period remains fixed at 30 seconds. Alternatively, in another embodiment, users are empowered to customize the predetermined initial period based on their preferences. Additionally, in yet another embodiment, the predetermined initial period dynamically adjusts to meet the minimum time requirement for accurate HRV value calculation.

[00314] Regarding the determination of central tendency, in one embodiment, it is represented by the average. Conversely, in another embodiment, central tendency is determined by the median. Additionally, in another embodiment, central tendency is established by the mode.

[00315] The second predetermined interval of time, in one embodiment, is set to 5 minutes. Alternatively, in another embodiment, the second predetermined interval aligns with the duration of the dual channel composite audio file being played.

[00316] Figure 12a illustrates components of the host server data storage according to an embodiment of the present invention.

[00317] The host server data storage 308 encompasses operating instructions 1701, which includes a user repository data table 1702 and a global data repository table 1792. Within the user repository data table 1702, there exists the first user profile data table 1703 and the n user profile data table 1704.

[00318] Electronic data communication is established between the host server data storage 308 and the host server processor 302, as well as the host server transceiver.

[00319] During operation, all necessary instructions for executing server operations are stored within the operating instructions 1701. These instructions include operations to be performed within the host server 300, as well as directives to be relayed to external servers such as the mixer 500, language model server 400, and text-to-voice converter server 600.

[00320] User-specific information resides within the user repository data table 1702, while data accessible to all users is stored in the global data repository table 1972.

[00321] Upon receiving information from the host server transceiver 304, the host server processor 302 discerns whether it pertains to user-specific data or universally accessible information. The host server processor 302 queries the respective data tables and subsequently delivers the information back to the host server transceiver 304 for further dissemination.

[00322] Figure 12B illustrates components of First user profile Data Table according to an embodiment of the present invention

[00323] First user profile Data Table 1703 includes the following fields: a first user name 1704, a first user password 1705, a first user first name 1706, a first user last name 1707, a first user age 1708, a first user mobile phone number 1709, a first user sex 1710, a first user subscription balance 1711, a first user subscription 1712, a first user account create date 1713, a first user HRV threshold data 1714, a first user HRV data table 1717, a first user affirmation data table 1720, a first user audio file data table 1721, a first user a user base tone data table 1722, a first user beat tone data table 1723, a first user overlay table 1724, a first user background data table 1727. Furthermore the first user HRV threshold data table 1714 includes a first user HRV threshold value 1 1715 and a first user HRV threshold value n 1716. The first user HRV data table 1717 includes a first user HRV value 1 1718 and a first user HRV value n 1719. Also the first user overlay data table 1724 includes first user overlay emphasis data 1 1725 and first user overlay emphasis data n 1726. The first ser background data table 1727 includes a first user background emphasis data 1 1728 and a first user background emphasis data n 1729.

[00324] In the operations, the host server processor 302, retrieves the first user user name 1704, the password 1705, the first user first name 1706, the first user last name 1707, the first user age 1708, the first user mobile phone number 1709, the first user sex 1710, the first user subscription balance 1711, the first user subscription 1712 and the first user measuring device name data1713 from the user interface the first time the user creates an account through the transmittal of this information from the user device transceiver to the host server transceiver 304.

[00325] In one embodiment, an account is created on the webpage. In another embodiment, the application is downloaded from a marketplace on the first computing device 200 and an account is created on the first computing device 200. In another embodiment, the application is downloaded from a marketplace on the second computing device 900 and an account is created on the second computing device 900.

[00326] The first user subscription balance 1711 and the first user subscription 1712 may be updated at a later time upon receiving data through the user account regarding premium selection.

[00327] When the First user Subscription 1712 is set to "Premium", the host server transceiver 304 makes the metadata associated with premium content (Premium overlay audio data files 1812, Premium background data files 1813, Premium affirmation data files 1814) available on the user interface 2200 (discussed in Figure 7A).

[00328] The first user HRV threshold value 1 1715 and the first user HRV threshold value n 1716, the first user HRV value 1 1718 and the first user HRV value n 1719 are obtained from the server processor 302 when workflow shown in Figure 9 is carried out. The computing device transceiver transmits this information from the computing device storage to the host server transceiver 304 which then stores it in the host server data storage under the instructions from host server processor 302.

[00329] The first user overlay emphasis data 1 1725 and the first user overlay emphasis data n 1726, the first user background emphasis data 1 1728 and a first user background emphasis data n 1729 are transmitted from the computing device transceiver to the host server transceiver when the workflow illustrated in Figure 7a is carried out. The computing device transceiver transmits this information from the computing device storage to the host server transceiver 304 which then stores it in the host server data storage under the instructions from host server processor 302.

[00330] In an exemplified system consisting of first computing device 200, host server 300, the host server processor 301, retrieves the first user user name 1704, the password 1705, the first user first name 1706, the first user last name 1707, the first user age 1708, the first user mobile phone number 1709, the first user sex 1710, the first user subscription balance 1711, the first user subscription 1712, the first user measuring device name data1713, the first user HRV threshold value 1 1715 and the first user HRV threshold value n 1716, the first user HRV value 1 1718 and the first user HRV value n 1719, the first user overlay emphasis data 1 1725 and the first user overlay emphasis data n 1726, the first user background emphasis data 1 1728 and a first user background emphasis data n 1729 from user interface 201 through the first computing device transceiver 204 accessing this information and transmitting this information to the host server transceiver 304. The host server transceiver 304, relays this data to the host server processor 302 which then stores this data in the First user profile Data Table 1703.

[00331] Figure 12C illustrates components of First user audio file data table according to an embodiment of the present invention

[00332] This table encompasses various data entries pertaining to distinct audio files, including the First User First Dual Channel Composite Audio File Data 1730, First User nth Dual Channel Composite Audio File Data 1731, First User First Audio File Data 1798a, and First User nth Audio File Data 1798b.

[00333] During operation, the First User First Audio File Data 1798a and First User nth Audio File Data 1798b represent a multitude of audio files, reflecting diverse selections made by the first user to craft a personalized sound package, as per the workflow depicted in Figure 10a and facilitated through the user interface showcased in

Figure 7a. Whenever the first user makes a specific selection, the host server processor 302 receives this information through interaction between the host server transceiver 304 and the corresponding computing device utilized by the user for selection.

[00334] The host server processor 302 then proceeds to store this audio data within the First User Audio File Data Table 1721. Upon receiving further instructions from the host server processor 302, the host server transceiver 304 accesses these files and transmits them to the mixer Transceiver 501.

[00335] Upon the creation of the dual-channel composite audio file within the mixer 500, the host server transceiver 304 retrieves the First User First Dual Channel Composite Audio File Data 1730 and First User nth Dual Channel Composite Audio File Data 1731 from the mixer 500, facilitated by the interaction between the host server transceiver 304 and the mixer transceiver 501.

[00336] Figure 12d illustrates components of First user base tone data table according to an embodiment of the present invention.

[00337] This table comprises a multitude of data files, including the First User First Base Tone Data 1732 and First User nth Base Tone Data 1733.

[00338] During operation, the retrieval of the First User First Base Tone Data 1732 and First User nth Base Tone Data 1733 is initiated by the host server processor 302 from the user interface, facilitated through a network connection. These data files represent a variety of text files, encompassing diverse base tone selections made by the first user to tailor a personalized sound package, following the workflow depicted in Figure 10 and facilitated through the user interface showcased in Figure 7a.

[00339] Upon the first user's selection of a specific base tone, the host server processor 302 receives this information through interaction between the host server transceiver 304 and the corresponding computing device employed by the user for selection. Subsequently, the host server processor 302 stores this audio data within the First User Base Tone Data Table 1722.

[00340] Upon receiving further instructions from the host server processor 302, the host server transceiver 304 accesses these files and transmits them to the Mixer Transceiver 501 for further processing in the system's workflow.

[00341] Figure 12E illustrates components of First user beat tone data table according to an embodiment of the present invention

[00342] This table comprises a multitude of data files, including the First User First Beat Tone Data 1734 and First User nth Beat Tone Data 1735.

[00343] During operation, the retrieval of the First User First Beat Tone Data 1734 and First User nth Beat Tone Data 1735 is initiated by the host server processor 301 from the user interface, facilitated through a network connection. These data files represent a variety of text files, encompassing diverse beat tone selections made by the first user to tailor a personalized sound package, following the workflow depicted in Figure 10 and facilitated through the user interface shown in Figure 7A.

[00344] Upon the first user's selection of a specific beat tone, the host server processor 302 receives this information through interaction between the host server transceiver 304 and the corresponding computing device employed by the user for selection. Subsequently, the host server processor 302 stores this audio data within the First User Beat Tone Data Table 1723.

[00345] Upon receiving further instructions from the host server processor 302, the host server transceiver 304 accesses these files and transmits them to the Mixer Transceiver 501 for further processing in the system's workflow.

[00346] Figure 12F illustrates components of First user affirmation data table according to an embodiment of the present invention.

[00347] The First User Affirmation Data Table 1720 comprises various fields, including the First User First Textbox Input Data 1736, First User n Textbox Input Data 1737, First User First AI Generated Affirmation Text Data 1738, First User nth AI Generated Affirmation Text Data 1739, First User First Text to Voice Converted Audio File Data 1740, First User nth Text to Voice Converted Audio File Data 1741, First User First Affirmation Name Data 1742, First User nth Affirmation Name Data 1743, First User First Affirmation Voice Data 1744, First User nth Affirmation Voice Data 1745, First User First Affirmation Emphasis Data 1746, and First User nth Affirmation Emphasis Data 1747.

[00348] In a system exemplified by the first computing device 200, host server 300, language model server 400, mixer 500, and text to voice converter 600, the operation unfolds as follows:

[00349] The acquisition of First User First Textbox Input Data 1736 and First User n Textbox Input Data 1737 gets initiated from the user interface of the first computing device when data is received regarding customization of AI affirmation through the interface depicted in Figure 7b, thereby initiating the workflow illustrated in Figure 10b. Subsequently, the host server transceiver 304 receives this data from the first computing device transceiver 204, and the host server processor 302 stores it in the First User Affirmation Data Table 1720.

[00350] The data is then transmitted to the language model server transceiver 401 through the host server transceiver 304. The language model server 400 generates textual phrases based on the received input data, resulting in the creation of First User First AI Generated Affirmation Text Data 1738 and First User nth AI Generated Affirmation Text Data 1739. Upon receipt of this data from the language model server transceiver 401, the host server processor 302 stores it in the First User Affirmation Data Table 1720.

[00351] Additionally, the First User First Affirmation Voice Data 1744 and First User nth Affirmation Voice Data 1745 are obtained from the first computing device user interface when the user selects to customize the AI affirmation, thereby commencing the workflow as depicted in Figure 10b. Upon receiving this data from the first computing device transceiver 204, the host server processor 302 stores it in the First User Affirmation Data Table 1720.

[00352] Subsequently, the First User Affirmation Voice Data 1744 and First User nth Affirmation Voice Data 1745, along with the corresponding AI-generated affirmation text data, are forwarded to the text to voice converter transceiver 601 through the host server transceiver 304. The text to voice converter server 600 transforms the textual data into audio data using the provided voice data. Upon receiving the converted audio data from the text to voice converter server through the host server transceiver 304, the host server processor 302 stores it as the First User First Text to Voice Converted Audio File Data 1740 and First User nth Text to Voice Converted Audio File Data 1741.

[00353] Moreover, the First User First Affirmation Emphasis Data 1746 and First User nth Affirmation Emphasis Data 1747 are sourced from the user interface 201 through the first computing device transceiver 204, which accesses and transmits this information to the host server transceiver 304 for storage.

[00354] Lastly, the host server transceiver 304 transfers the accumulated data, including the text to voice converted audio files, to the mixer transceiver 501 for further processing.

[00355] Figure 12G illustrates components of First user history data table according to an embodiment of the present invention.

[00356] First user history data table 1792 stores the information that is generated when operation 1500 illustrated in Figure 11 is carried out by the host server processor 302. The host server processor 302 stores this information and transmits it through the host server transceiver 304 to the first computing device user interface 201 through the first computing device transceiver 204.

[00357] Figures 12H to 12M illustrate the same data structure for subsequent user profiles.

[00358] Figure 13 illustrates the components of Global Data Repository Table according to an embodiment of the present invention.

[00359] The embodiment shows the data structure 1800 that exists under Global data repository table 1792.

[00360] Figure 13 delineates the structured data schema denoted as 1800 within the Global Data Repository Table 1792. This schema encompasses the Global Audio File Table 1800, which comprises several key components essential for managing audio files. These components include the Background Audio Data Files 1801, storing various background audio files, and the corresponding Background Default Emphasis Data Files 1802, specifying default emphasis levels for background audio. Additionally, the schema includes Overlay Audio Data Files 1803 and Overlay Default Emphasis Data Files 1804, housing overlay audio files and their default emphasis levels, respectively. Moreover, it comprises Affirmation Audio Data Files 1805, Affirmation Default Emphasis Data Files 1806, and Affirmation Voice Audio Data File 1807, managing affirmation-related audio content. Background category data files 1808, Overlay category data files 1809, Affirmation category data files 1811 houses the names of different categories of background, overlay and affirmations. Premium overlay audio data files 1812, Premium background audio data files 1813 and Premium affirmation audio data files 1814 are premium content files available only to "Premium" subscribers.

[00361] Furthermore, the schema incorporates Global Text Alert Data Files 1810, Global Base Tone Data Files 1820, Global Beat Tone Data File 1830, and Global Audio Alert Data Files 1840, providing comprehensive data management for various audio-related elements.

[00362] The Background Audio Data Files 1801 comprise numerous distinct categories, each housing a variety of audio files. These categories encompass diverse background sounds, including but not limited to natural elements such as ocean waves, rainfall, thunderstorms, babbling brooks, as well as artificial sounds like white noise.

Furthermore, the Background Default Emphasis Data Files 1802 contain pertinent information regarding the relative volume levels of the background audio in relation to the dual-channel audio file. Notably, each category within these data files encompasses a multitude of audio files, thereby offering users a wide selection to customize their audio experience.

[00363] The Overlay Audio Data Files 1803 encompass multiple categories, each comprising a diverse array of audio files. These categories include, but are not limited to, Synth, Piano, Asian, and Country, offering users a variety of overlay options for their audio compositions. Additionally, the Overlay Default Emphasis Data Files 1804 contain information regarding the relative volume levels of the overlay audio compared to the dual-channel audio file. Within each category, users can access numerous audio files to tailor their compositions according to their preferences.

[00364] In one embodiment, the default emphasis of the Overlay is set to twice the amplitude of the Base/Beat Tone, providing a balanced audio composition. In another embodiment, users have the flexibility to manually adjust the emphasis according to their preferences using the user interface depicted in Figure 7A. This feature enables users to fine-tune the audio composition to suit their individual needs and desired outcomes.

[00365] The affirmation audio data files 1805 contain a plurality of categories under which a plurality of audio files is stored. Categories for affirmation include but are not limited to Feel Good, Relax, Guided Meditation, and AI Generated. Affirmation default emphasis data files 1806 contain data relating to how loud the background needs to be in comparison to the dual channel audio file. Each of these categories include a plurality of audio files.

[00366] The Affirmations voice audio data files 1807 comprise a collection of audio files featuring various voices, allowing users to customize the voice in which affirmations are delivered. These audio files encompass a diverse range of voices, including different genders, voice characteristics, accents, and styles. Users have the flexibility to select the voice that best suits their preferences and resonates with them, enhancing their overall engagement and experience with the affirmations.

[00367] In one embodiment, the affirmation audio files 1805 are standardized to a duration of 5 minutes each, providing consistency in the duration of affirmations. However, in another embodiment, the affirmation audio files 1805 may extend beyond the 5-minute mark to accommodate longer affirmations or meditation sessions. Conversely, in yet another embodiment, the affirmation audio files 1805 may be shorter than 5 minutes to cater to users with time constraints or preferences for shorter sessions.

[00368] Moreover, in one embodiment, the affirmation audio files 1805 may feature a single phrase repeated throughout the duration of the file, offering a consistent and focused affirmation experience. Conversely, in another embodiment, the affirmation audio files 1805 may comprise a collection of phrases repeated sequentially, providing a varied and dynamic affirmation experience to users. These variations allow for flexibility in catering to diverse user preferences and needs within the system.

[00369] When users opt for AI-generated affirmations, it signifies their preference for customized affirmations tailored to their specific needs and preferences. Consequently, files containing information regarding AI-generated affirmations are stored in the user repository data table 1702, as elaborated in detail in Figure 12F.

[00370] Global Text Alert Data Files 1810 contain text data files that are utilized for sending textual alerts to the users.

[00371] The Global Base Tone Data Files 1820 contains information regarding the default frequency of 432 Hz utilized in the creation of the dual channel audio file. However, users have the flexibility to customize the base tone within the range of 100 Hz to 800 Hz to better suit their preferences and requirements. When users opt to customize the base tone, it indicates their preference for personalized adjustments. Consequently, files containing information regarding customized base tone frequencies are stored in the user repository data table 1702.

[00372] In one embodiment, the default frequency is maintained at 432 Hz, while in another embodiment, users have the option to adjust the frequency within the range of 100-800 Hz.

[00373] Similarly, the Global Beat Tone Data Files 1830 contain data pertaining to the default frequency of 10 Hz utilized in the creation of the dual channel audio file. Nonetheless, users have the option to customize the beat tone within the range of 4 Hz to 13 Hz to align with their individual preferences and requirements. Whenever users choose to customize the beat tone, it signifies their preference for tailored adjustments. Consequently, files containing information regarding customized beat tone frequencies are stored in the user repository data table 1702.

[00374] In one embodiment, the default frequency for beat tone is maintained at 10 Hz, while in another embodiment, users have the option to adjust the frequency within the range of 4-13 Hz, while in another embodiment, users have the option to adjust the frequency within the range of 0-30 Hz.

[00375] The Global Audio Alert Data Files 1840 encompass audio data files utilized for user alerts as needed.

[00376] In an exemplary embodiment featuring a wearable device 100, a first computing device 200, and a host server 300, the global data structure operates as follows:

[00377] When a user opts to create a dual-channel composite audio file by interacting with the user interface, as depicted in Figure 7A, the transceiver 204 of the first computing device transmits this selection to the transceiver 304 of the host server. Upon receiving this information, the host server processor 302 accesses the metadata of the global audio file data table 1800, Global base tone data files 1820, and Global beat tone data files 1830, making this information available to the user interface through the transceivers of both the host server and the first computing device.

[00378] Additionally, if the subscription is set to "premium" (discussed in Figure 16), the host server processor additionally accesses metadata related to Premium overlay audio data files 1812, Premium background audio data files 1813 and Premium affirmation audio data files 1814 and makes this information available to the user interface through the transceivers of both the host server and the first computing device.

[00379] Global text alert data files 1810 and Global audio alert data files 1840 are activated only when the host server processor 302 determines that a specific user's Heart Rate Variability (HRV) falls below a predefined threshold.

[00380] In an embodiment where both audio and text alerts are dispatched by the host server processor 302, upon determining that a user's HRV is below the threshold, the host server transceiver 304 accesses Global text alert data files 1810 and Global audio alert data files 1840, transmitting them to the first computing device via the first computing device transceiver 204. Subsequently, the text alert is displayed on the user interface 201 of the first computing device using its visual output component 209. Simultaneously, the host server transceiver 304 accesses Global audio alert data files 1840 and transmits them to the wearable device's first and second speakers 105a and 105b through the wearable device transceiver 104.

[00381] Figure 14 illustrates components of the first computing device data storage according to an embodiment of the present invention.

[00382] The first computing device data storage 208 encompasses operating instructions 2312, which includes a HRV Data table 2301, Audio alert data 2302, text alert data 2303, system application 2304, user profile information 2305, HRV threshold data table 2306, Default HRV threshold 2311 and heartbeat data table 2313, user subscription data 2316. Within the HRV Data Table 2301, there exists HRV value 1 2307 and HRV value n 2308. Within the HRV Threshold Data Table 2306, there exists HRV Threshold value 1 2307 and HRV threshold value n 2310. Within the heartbeat Data Table 2313, there exists heartbeat value 1 2314 and heartbeat value n 2315.

[00383] Electronic linkage is established between the first computing device data storage 208 and the first computing device processor 202, as well as the first computing device transceiver 204.

[00384] During operation, all necessary instructions for executing server operations are stored within operating instructions 2312. These instructions encompass tasks to be performed within the first computing device 200.

[00385] When the user first interacts with the application associated with the Binaural Beats Module 307, all the user specific information are downloaded along with the text alert data 2303 and audio alert data 2302 from the host server data storage 308 and stored in the user profile information 2305 through interaction between the host server transceiver 304 and the first computing device transceiver 204.

[00386] Similarly, user subscription data 2316 is also downloaded from the host server data storage 308 and stored in user subscription data 2316. This can be changed by the user by going to the application settings. When the user changes user subscription data 2316, operations described in Figure 16 are carried out.

[00387] Similarly, the default HRV value is downloaded from the host server data storage 308 and stored in the default HRV threshold through interaction between the host server transceiver 304 and the first computing device transceiver 204.

[00388] When the wearable device transceiver transmits the heartbeat data to the first computing device transceiver 204, the first computing device processor 202 stores this in the heartbeat data table.

[00389] The HRV calculator accesses this heartbeat data and calculates the HRV value based on the directives obtained from the first computing device processor.

[00390] HRV value 1 and HRV value 1 are stored by the first computing device processor 202 when the HRV calculator computes HRV using the heartbeat data. This is made available for the first computing device transceiver to transmit this data to the host server upon request.

[00391] HRV threshold data table is populated from the user history data files on the host server data storage 308.

[00392] When the first computing device processor determines that the HRV value is less than the default HRV threshold, the first computing device processor accesses the audio alert data and text alert data and transmits it to the auditory device according to various embodiments discussed in Figures 1-3.

[00393] Figure 15 illustrates components of the second computing device data storage according to an embodiment of the present invention.

[00394] The second computing device data storage 908 encompasses operating instructions 9512, which includes a HRV Data table 9501, Audio alert data 9502, text alert data 9503, system application 9504, user profile information 9505, HRV threshold data table 9506, Default HRV threshold 9511 and heartbeat data table 9513, user subscription data 2316. Within the HRV Data Table 9501, there exists HRV value 1 9507 and HRV value n 9508. Within the HRV Threshold Data Table 9506, there exists HRV Threshold value 1 9507 and HRV threshold value n 9510. Within the heartbeat Data Table 9513, there exists heartbeat value 1 9514 and heartbeat value n 9515.

[00395] Electronic linkage is established between the second computing device data storage 908 and the second computing device processor 902, as well as the second computing device transceiver 904.

[00396] During operation, all necessary instructions for executing server operations are stored within operating instructions 9512. These instructions encompass tasks to be performed within the second computing device 900.

[00397] When the user second interacts with the application associated with the Binaural Beats Module 307, all the user specific information is downloaded along with the text alert data 9503 and audio alert data 9502 from the host server data storage 308 and stored in the user profile information 9505 through interaction between the host server transceiver 304 and the second computing device transceiver 904.

[00398] Similarly, user subscription data 9316 is also downloaded from the host server data storage 308 and stored in user subscription data 9316. This can be changed by the user by going to the application settings. When the user changes user subscription data 9316, operations described in Figure 16 are carried out.

[00399] Similarly, the default HRV value is downloaded from the host server data storage 308 and stored in the default HRV threshold through interaction between the host server transceiver 304 and the second computing device transceiver 904.

[00400] The heartbeat detected by the sensor in the second computing device is stored in the heartbeat data table.

[00401] The HRV calculator accesses this heartbeat data and calculates the HRV value based on the directives obtained from the second computing device processor.

[00402] HRV value 1 and HRV value 1 are stored by the second computing device processor 902 when the HRV calculator computes HRV using the heartbeat data. This is made available for the second computing device transceiver to transmit this data to the host server upon request.

[00403] HRV threshold data table is populated from the user history data files on the host server data storage 308.

[00404] When the second computing device processor determines that the HRV value is less than the default HRV threshold, the second computing device processor accesses the audio alert data and text alert data and transmits it to the auditory device according to various embodiments discussed in Figures 4.

[00405] Figure 16 illustrates the workflow to show how access is provided to premium data on the user interface.

[00406] In step 3001, the system checks if at the user interface the "On" is checked on "On/Off" Subscription choice button. In step 3002, the system transmits the data corresponding to "On" choice to the host server.

[00407] In step 3003, the system sets the first user subscription 1712 to "Premium".

[00408] In an exemplified embodiment containing the first computing device 200 and a host server 300, the workflow for this figure is as below.

[00409] In operation, in 3001 when the user first creates a profile, on the user interface 201 an option is presented in the form of an "On/off" Premium Subscription button.

[00410] When data corresponding to "On" is received at the user interface 201, the first computing device processor stores this information as User subscription data 2316 on the first computing device storage 208. Subsequently, in step 3002, the first computing device processor transmits data corresponding to "On" to the first computing device transceiver 204 which in turn transmits User subscription data 2316 to the host server transceiver 304. The host server transceiver 304 transmits User subscription data 2316 to the host server processor 302. In step 3003, the host server processor 302 sets First user Subscription 1712 is set to "Premium".

[00411] In step 3004, the host server processor 302, access metadata related to Premium overlay audio data files 1812 and transmits it to the first computing device processor 202 through host server transceiver 304 and first computing device transceiver 204. The first computing device processor 202, displays this in the dropdown menu of Overlay name input data field 2208 (discussed in Figure 7A).

[00412] Simultaneously, in step 3004, the host server processor 302, access metadata related to Premium Background audio data files 1813 and transmits it to the first computing device processor 202 through host server transceiver 304 and first computing device transceiver 204. The first computing device processor 202 displays this in the dropdown menu of Background name input data field 2211 (discussed in Figure 7A).

[00413] Simultaneously, in step 3004, the host server processor 302, access metadata related to Premium affirmation audio data files 1813 and transmits it to the first computing device processor 202 through host server transceiver 304 and first computing device transceiver 204. The first computing device processor 202 displays this in the dropdown menu of Affirmation name input data field 2215 (discussed in Figure 7A).

[00414] Premium affirmation audio files, premium background audio files, premium overlay audio files can be affirmations that are generated in popular artists voice.

[00415] The present invention presents an innovative system for stress mitigation that distinguishes itself within the realm of existing technologies. Through the integration of Heart Rate Variability (HRV) monitoring and binaural beats technology, the present invention provides a holistic solution aimed at addressing stress. While the existing physiological monitoring and ailment alleviation patents focus on mental state monitoring, music association with brainwave data, or the treatment of anxiety and depression, the present invention places primary emphasis stress reduction. The incorporation of HRV monitoring facilitates the real-time detection of stress, while binaural beats technology delivers personalized auditory interventions known for stress alleviation. Additionally, the present invention offers users the ability to tailor their stress reduction experience using a unique customizable dual-channel audio that users can create instantaneously, thereby providing a highly individualized approach. Continuous monitoring and feedback mechanisms empower users to track their stress levels longitudinally and assess the efficacy of various interventions.

[00416] While particular elements, embodiments, and applications of the present invention have been shown and described, it is understood that the invention is not limited thereto because modifications may be made by those skilled in the art, particularly in light of the foregoing teaching. It is therefore contemplated by the appended claims to cover such modifications and incorporate those features which come within the spirit and scope of the invention.

CLAIMS

1. A system comprising:

a heartbeat sensing electronic device;

a processor; and

an electronic device.

wherein said heartbeat sensing electronic device comprising:

a heartbeat sensor detecting and measuring heartbeat signal;

a converter converting said heartbeat signal to digital heartbeat data; and

a first transceiver wherein said first transceiver is in electronic data communication with a processor.

wherein said electronic device comprising:

an electronic device transceiver in data communication with said processor and said heartbeat sensing electronic device;

a first at least one sensory including audio output component;

a user interface; and

a data storage unit wherein said data storage unit storing at least one alert file including audio data, HRV threshold data.

wherein said processor is configured to:

receive said digital heartbeat data from said heartbeat sensing electronic device;

calculate instantaneous HRV data using said digital heart rate data;

compare said instantaneous HRV data to predetermined HRV threshold data;

store said instantaneous HRV data; and

when said current HRV value is less than said HRV threshold data, said processor transmits...

transmit audio sensory data determined by said at least one alert file including audio data to said a ~~first at least one sensory including~~ audio output component.

2. The system of claim 1 wherein said processor is further configured to transmit visual sensory signal determined by said at least one alert file including audio data to said user interface.

3. The system of claim 1 wherein said heartbeat sensing electronic device contains at least one second sensory including audio output component.

4. The system of claim 3 wherein said processor is further configured to transmit audio sensory data determined by said at least one alert file including audio data to said second at least one sensory including audio output component.

5. The System of claim 1 wherein said heartbeat sensing electronic device is a wearable device with timekeeping capabilities like a smartwatch.

6. The System of claim 1 wherein said heartbeat sensing electronic device is a wearable device like a fitness monitor band structure is designed to be worn around the user's wrist, forearm, or chest

7. The System of claim 1 wherein said heartbeat sensing electronic device is a wearable device like a headphone

8. System of claim 1 wherein said electronic device is a smartphone.

9. System of claim 1 wherein said electronic device is a portable computing device like a tablet.

10. System of claim 1 wherein said first electronic device is a portable computing device like a laptop.

11. A system to create dual channel composite audio file comprising:

an electronic device;

a host server; and

a mixer server;

wherein said electronic device comprising:

an interface to receive dual channel composite audio input data;

an electronic device transceiver wherein said electronic device;

an electronic device data storage unit; and

an electronic device processor;

wherein said host server comprising:

a host server transceiver;

a host server storage unit; and

a host server processor;

wherein said mixer comprising:

a mixer processor;

a mixer transceiver;

a mixer first mono channel; and

a mixer second mono channel;

wherein said electronic device processor is configured to:

receive dual channel composite audio input data; and

transmit dual channel composite audio input data.

said mixer processor is configured to:

receive dual channel composite audio input data;

Claim is only 1 sentence

— This claim is very poorly structured

— just a bulk recitation of components?

very little connection between components generate a first sound wave at first frequency in said first mono channel using dual channel composite audio input data;

generate a second sound wave at second frequency in said second mono channel using dual channel composite audio input data;

combine said first sound wave at first frequency and said second sound wave at second frequency to generate a dual channel composite audio file; and

transmit said dual channel composite audio file.

host server processor configured to:

receive said dual channel composite audio file; and

transmit said dual channel composite audio file.

12. System of claim 11 wherein said electronic device is a portable computing device like a tablet.

13. System of claim 11 wherein said first electronic device is a portable computing device like a laptop.

14. Method comprising:

receiving dual channel composite audio input data from a computing device;

transmitting said dual channel composite audio input data from a said computing device to host server;

storing said dual channel composite audio input data from a said computing device in host server data storage;

transmitting said dual channel composite audio input data from a said host server data storage to a mixer server;

generating a first sound wave at first frequency in said first mono channel using dual channel composite audio input data;

generating a second sound wave at second frequency in said second mono channel using dual channel composite audio input data;

combining said first sound wave at first frequency and said second sound wave at second frequency to generate a dual channel composite audio file;

transmitting said dual channel composite audio file to host server; and

storing said dual channel composite audio file in said host server data storage.

15. Method of claim 14 further comprising:

transmitting said dual channel composite audio file to said computing device.

16. Method of claim 15 further comprising:

Transmitting said dual channel composite audio file to a dual piece aural device and converting data in said dual channel composite audio file to dual channel composite audio signal and streaming dual channel composite audio file in a manner in which signal corresponding to said first sound wave at first frequency is streamed to one speaker and signal corresponding to said second sound wave at second frequency is streamed the other speaker.

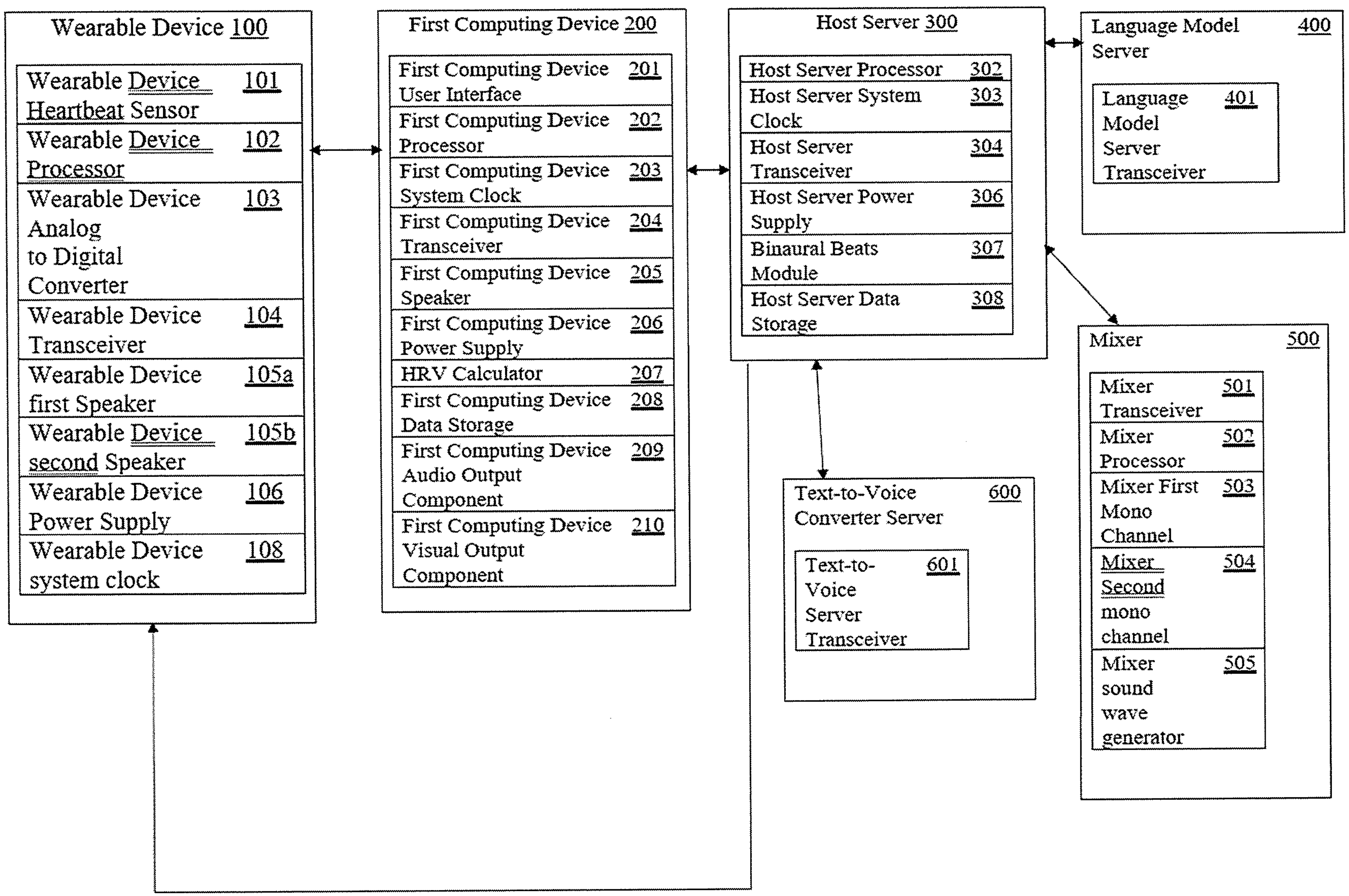
ABSTRACT

A system is provided for real-time monitoring of heartbeats and generating alerts based on Heart Rate Variability (HRV) thresholds. The system receives digital heartbeat data, calculates HRV, compares it with predetermined thresholds, and transmits audio alerts based if stress is detected.

Additionally, a system and a method are provided which creates a dual channel composite output file using inputs received through an user interface which can be delivered to a dual piece headset to create a binaural beats effect which is known to reduce stress.

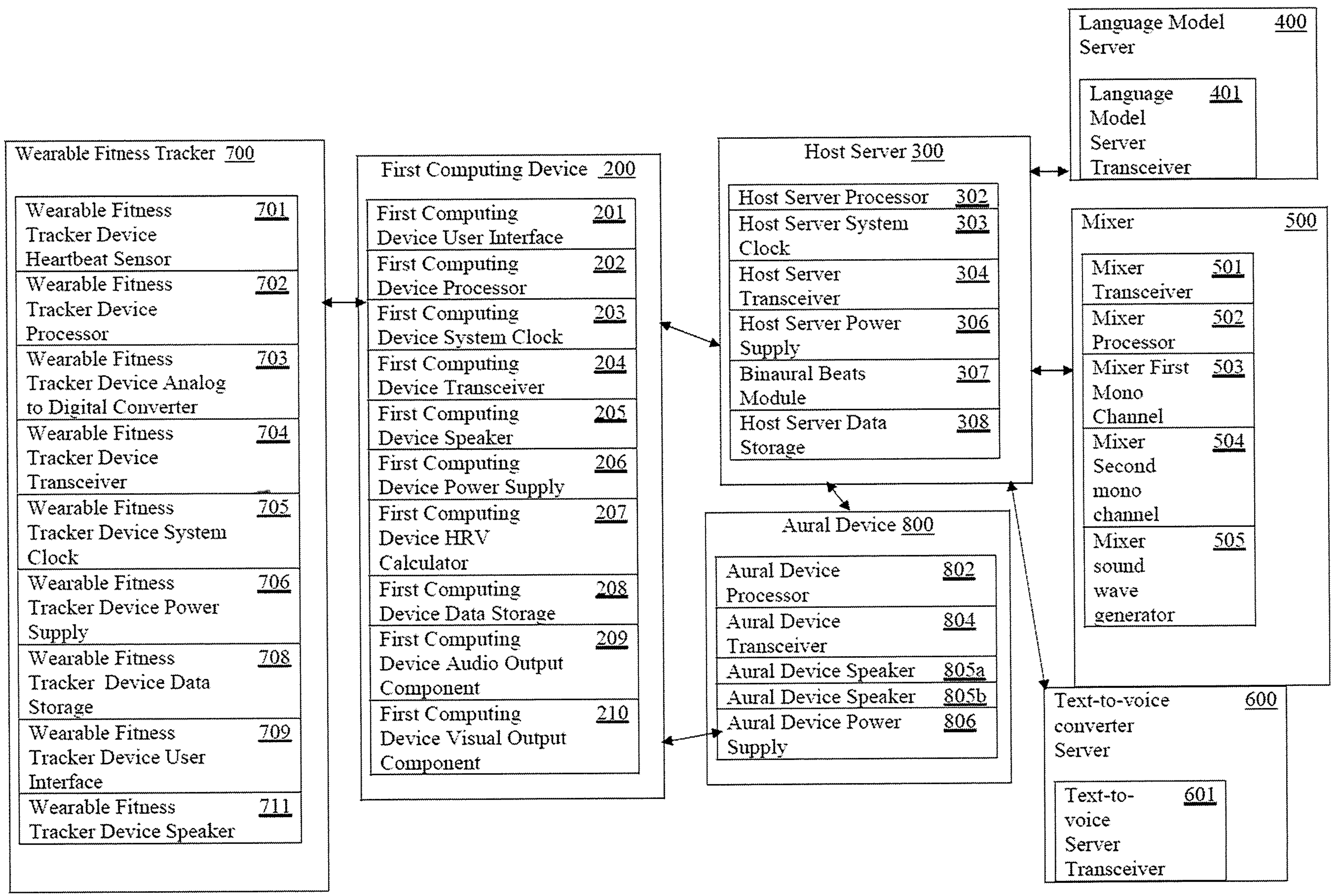
The disclosed invention unveils a comprehensive and meticulously engineered system architecture, primed for seamless heart rate monitoring and proactive alert generation. By leveraging advanced Heart Rate Variability (HRV) metrics and innovative audio processing techniques, the disclosed system promises to redefine the landscape of physiological monitoring and alert dissemination across diverse application domains.

Figure 1



Wearable Device 100
Wearable Device Heartbeat Sensor 101
Wearable Device Processor 102
Wearable Device Analog to Digital Converter 103
Wearable Device Transceiver 104
Wearable Device first Speaker 105a
Wearable Device second Speaker 105b
Wearable Device Power Supply 106
Wearable Device system clock 108
First Computing Device 200
First Computing Device User Interface 201
First Computing Device Processor 202
First Computing Device System Clock 203
First Computing Device Transceiver 204
First Computing Device Speaker 205
First Computing Device Power Supply 206
HRV Calculator 207
First Computing Device Data Storage 208
First Computing Device Audio Output Component 209
First Computing Device Visual Output Component 210
Host Server 300
Host Server Processor 302
Host Server System Clock 303
Host Server Transceiver 304
Host Server Power Supply 306
Binaural Beats Module 307
Host Server Data Storage 308
Language Model Server 400
Language Model Server Transceiver 401
Mixer 500
Mixer Transceiver 501
Mixer Processor 502
Mixer First Mono Channel 503
Mixer Second mono channel 504
Mixer sound wave generator 505
Text-to-Voice Converter Server 600
Text-to-Voice Server Transceiver 601

Figure 2



Wearable Fitness Tracker 700
Wearable Fitness Tracker Device Heartbeat Sensor 701
Wearable Fitness Tracker Device Processor 702
Wearable Fitness Tracker Device Analog to Digital Converter 703
Wearable Fitness Tracker Device Transceiver 704
Wearable Fitness Tracker Device System Clock 705
Wearable Fitness Tracker Device Power Supply 706
Wearable Fitness Tracker Device Data Storage 708
Wearable Fitness Tracker Device User Interface 709
Wearable Fitness Tracker Device Speaker 711
First Computing Device 200
First Computing Device User Interface 201
First Computing Device Processor 202
First Computing Device System Clock 203
First Computing Device Transceiver 204
First Computing Device Speaker 205
First Computing Device Power Supply 206
First Computing Device HRV Calculator 207
First Computing Device Data Storage 208
First Computing Device Audio Output Component 209
First Computing Device Visual Output Component 210
Host Server 300
Host Server Processor 302
Host Server System Clock 303
Host Server Transceiver 304
Host Server Power Supply 306
Binaural Beats Module 307
Host Server Data Storage 308
Aural Device 800
Aural Device Processor 802
Aural Device Transceiver 804
Aural Device Speaker 805a
Aural Device Speaker 805b
Aural Device Power Supply 806
Language Model Server 400
Language Model Server Transceiver 401
Mixer 500
Mixer Transceiver 501
Mixer Processor 502
Mixer First Mono Channel 503
Mixer Second mono channel 504
Mixer sound wave generator 505
Text-to-voice converter Server 600
Text-to-voice Server Transceiver 601

Figure 3

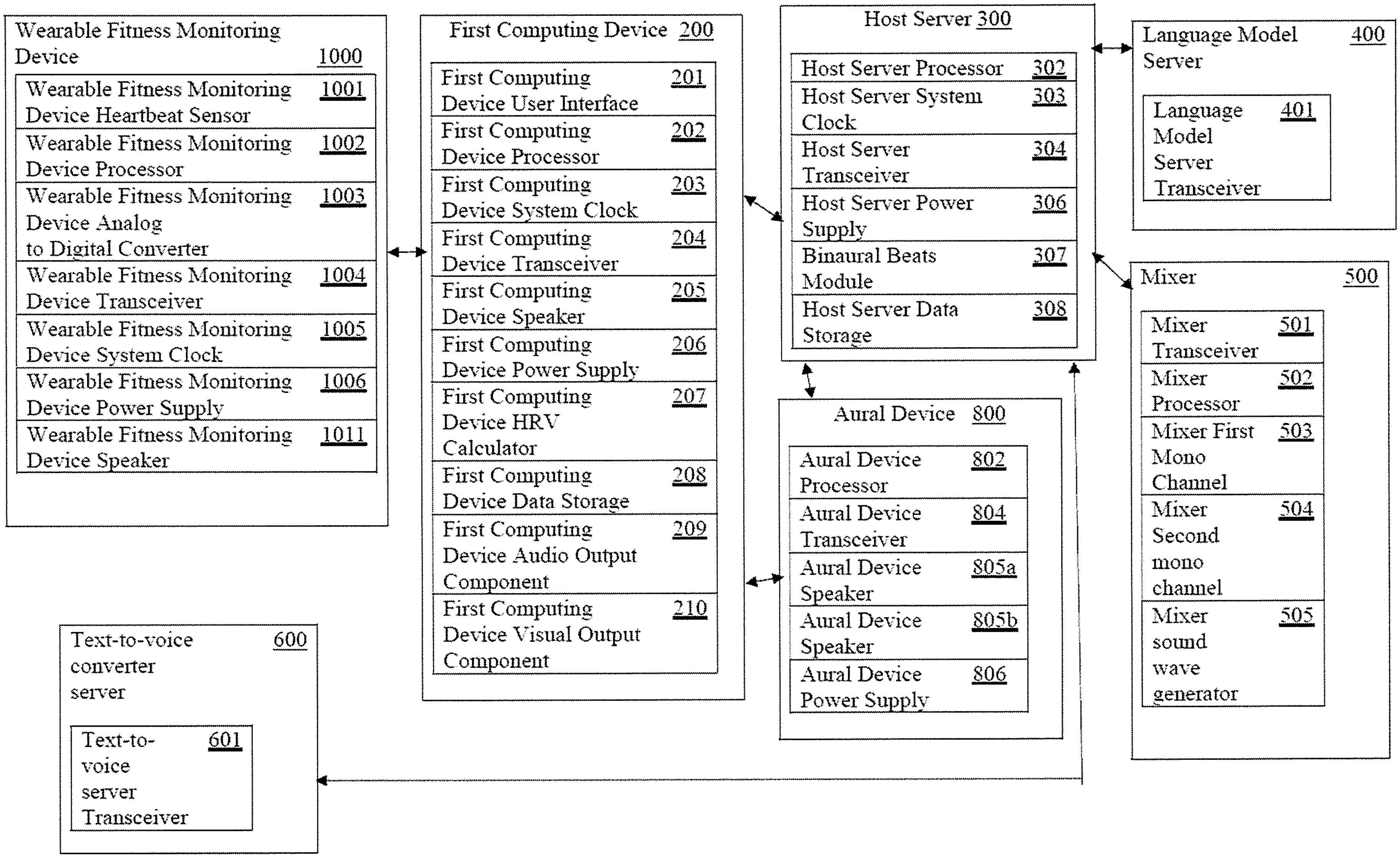
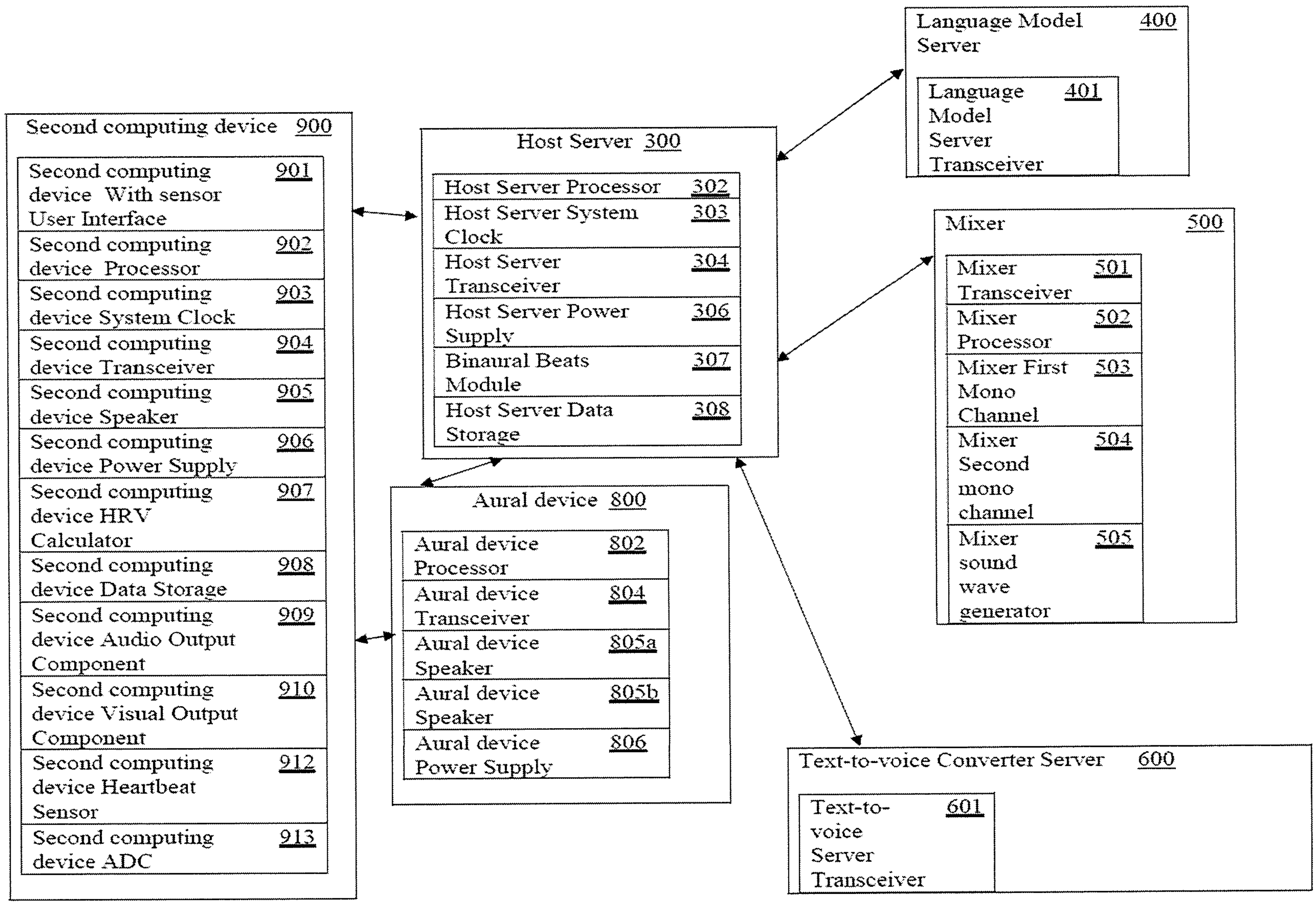

Wearable Fitness Monitoring Device 1000
Wearable Fitness Monitoring Device Heartbeat Sensor 1001
Wearable Fitness Monitoring Device Processor 1002
Wearable Fitness Monitoring Device Analog to Digital Converter 1003
Wearable Fitness Monitoring Device Transceiver 1004
Wearable Fitness Monitoring Device System Clock 1005
Wearable Fitness Monitoring Device Power Supply 1006
Wearable Fitness Monitoring Device Speaker 1011
First Computing Device 200
First Computing Device User Interface 201
First Computing Device Processor 202
First Computing Device System Clock 203
First Computing Device Transceiver 204
First Computing Device Speaker 205
First Computing Device Power Supply 206
First Computing Device HRV Calculator 207
First Computing Device Data Storage 208
First Computing Device Audio Output Component 209
First Computing Device Visual Output Component 210
Host Server 300
Host Server Processor 302
Host Server System Clock 303
Host Server Transceiver 304
Host Server Power Supply 306
Binaural Beats Module 307
Host Server Data Storage 308
Language Model Server 400
Language Model Server Transceiver 401
Mixer 500
Mixer Transceiver 501
Mixer Processor 502
Mixer First Mono Channel 503
Mixer Second mono channel 504
Mixer sound wave generator 505
Aural Device 800
Aural Device Processor 802
Aural Device Transceiver 804
Aural Device Speaker 805a
Aural Device Speaker 805b
Aural Device Power Supply 806
Text-to-voice converter server 600
Text-to-voice server Transceiver 601

Figure 4



Second computing device 900
Second computing device With sensor User Interface 901
Second computing device Processor 902
Second computing device System Clock 903
Second computing device Transceiver 904
Second computing device Speaker 905
Second computing device Power Supply 906
Second computing device HRV Calculator 907
Second computing device Data Storage 908
Second computing device Audio Output Component 909
Second computing device Visual Output Component 910
Second computing device Heartbeat Sensor 912
Second computing device ADC 913
Host Server 300
Host Server Processor 302
Host Server System Clock 303
Host Server Transceiver 304
Host Server Power Supply 306
Binaural Beats Module 307
Host Server Data Storage 308
Aural device 800
Aural device Processor 802
Aural device Transceiver 804
Aural device Speaker 805a
Aural device Speaker 805b
Aural device Power Supply 806
Language Model Server 400
Language Model Server Transceiver 401
Mixer 500
Mixer Transceiver 501
Mixer Processor 502
Mixer First Mono Channel 503
Mixer Second mono channel 504
Mixer sound wave generator 505
Text-to-voice Converter Server 600
Text-to-voice Server Transceiver 601

Figure 5

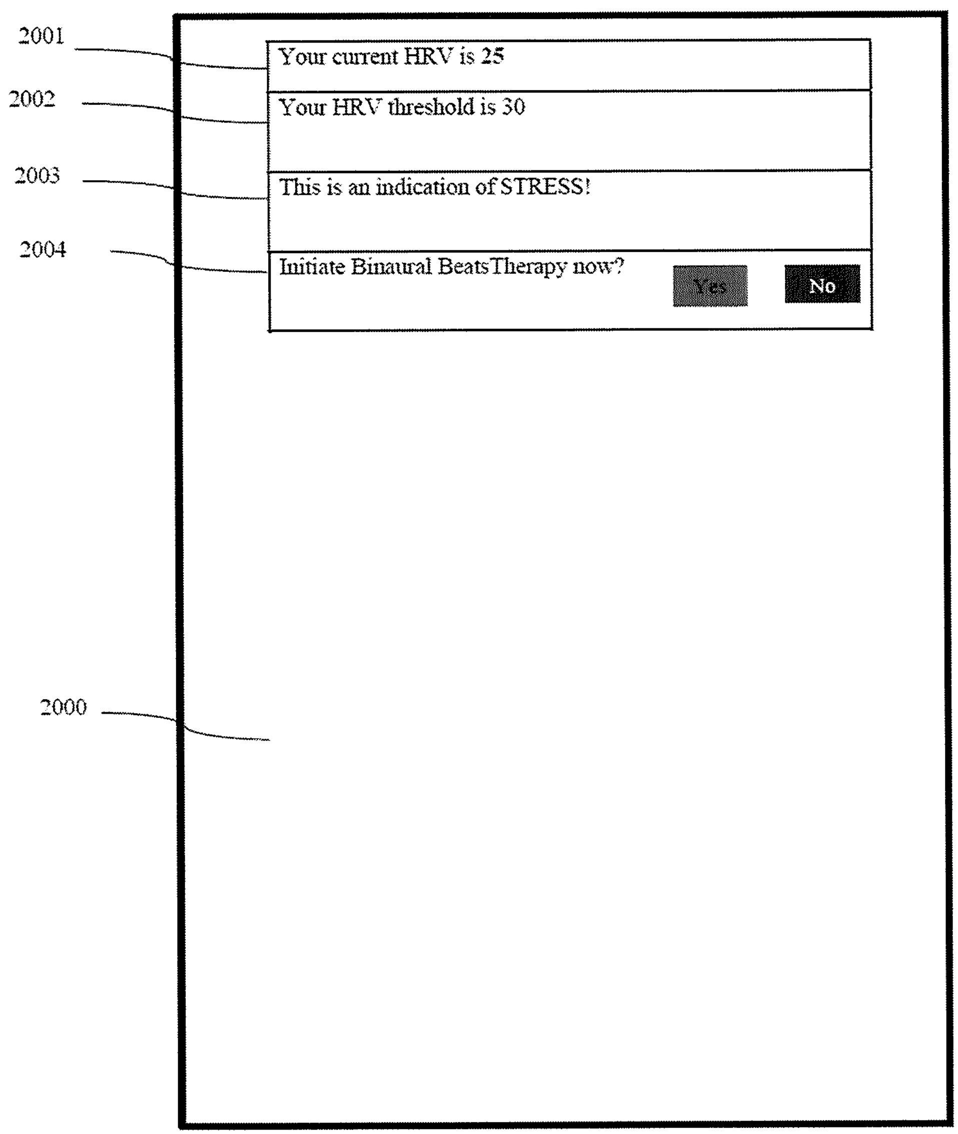

2001
2002
2003
2004
2000
Your current HRV is 25
Your HRV threshold is 30
This is an indication of STRESS!
Initiate Binaural BeatsTherapy now?
Yes
No

Figure 6

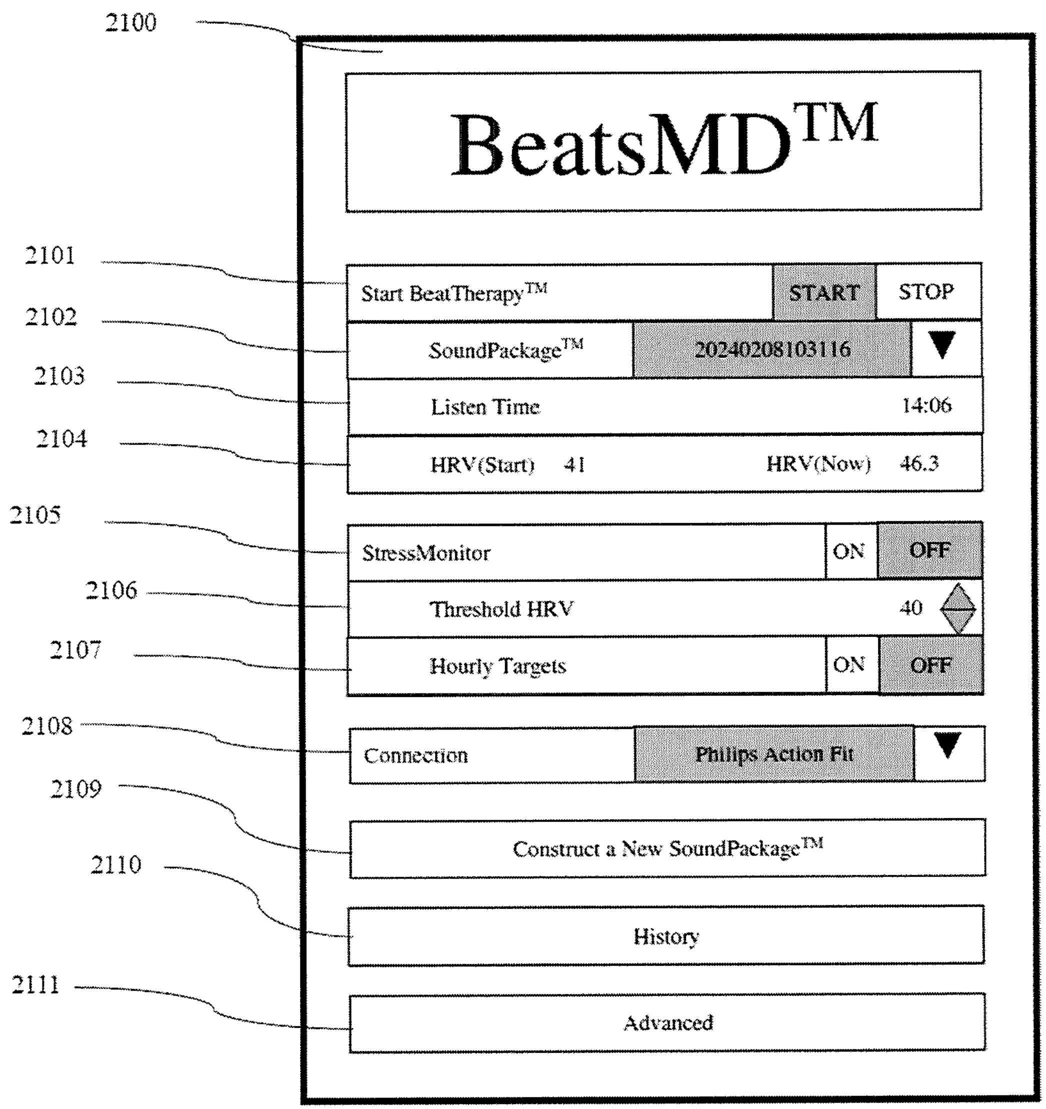

2100
BeatsMDTM
2101
Start BeatTherapyTM
START
STOP
2102
SoundPackageTM
20240208103116
2103
Listen Time
14:06
2104
HRV(Start) 41
HRV(Now) 46.3
2105
StressMonitor
ON
OFF
2106
Threshold HRV
40
2107
Hourly Targets
ON
OFF
2108
Connection
Philips Action Fit
2109
Construct a New SoundPackageTM
2110
History
2111
Advanced

Figure 7

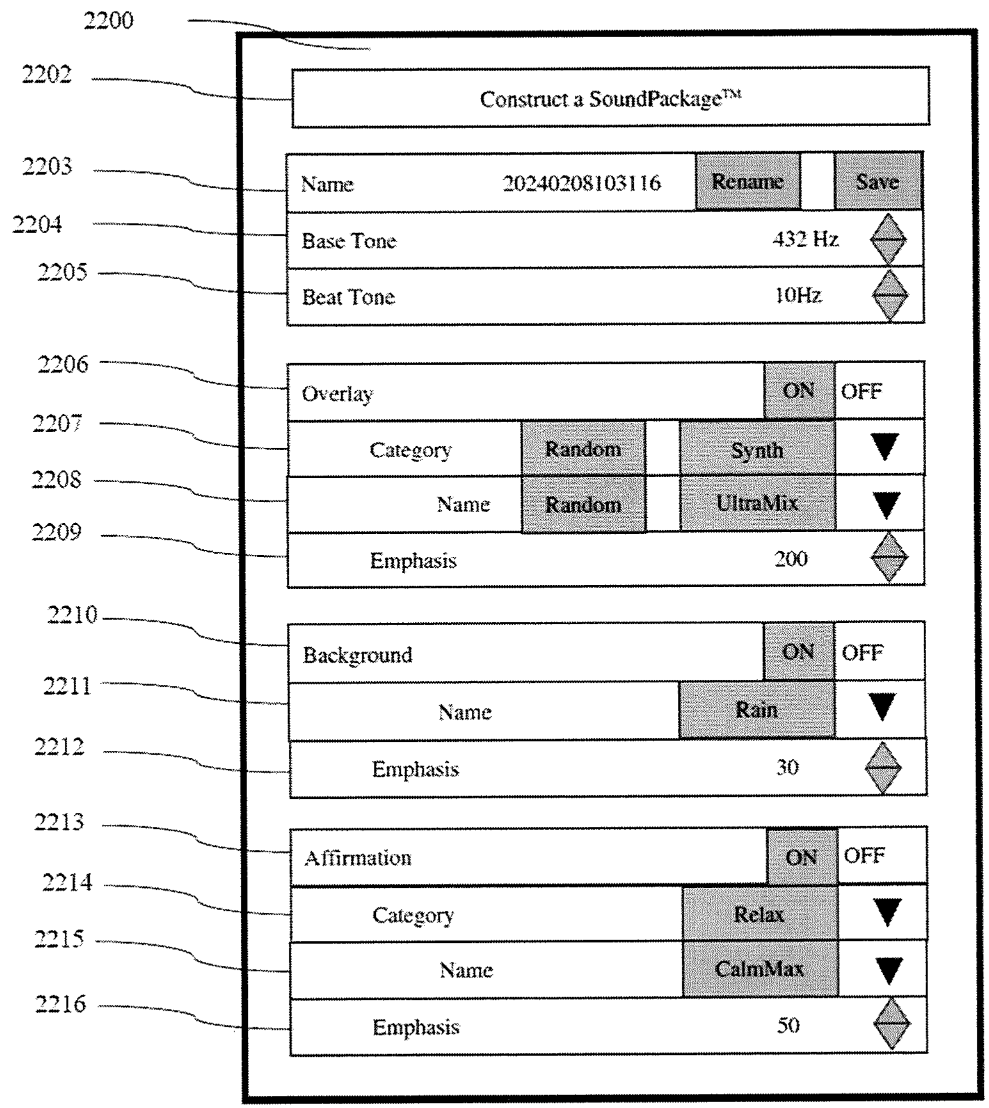
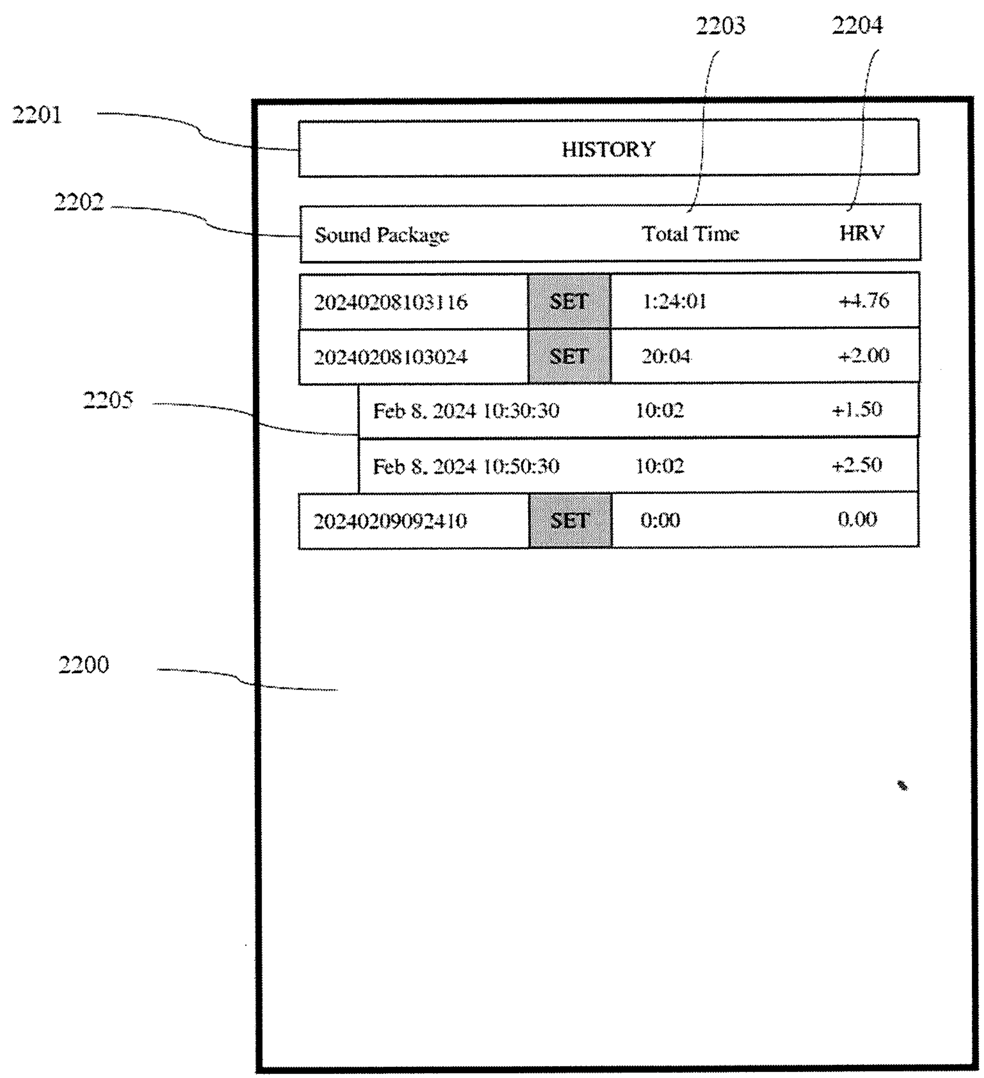
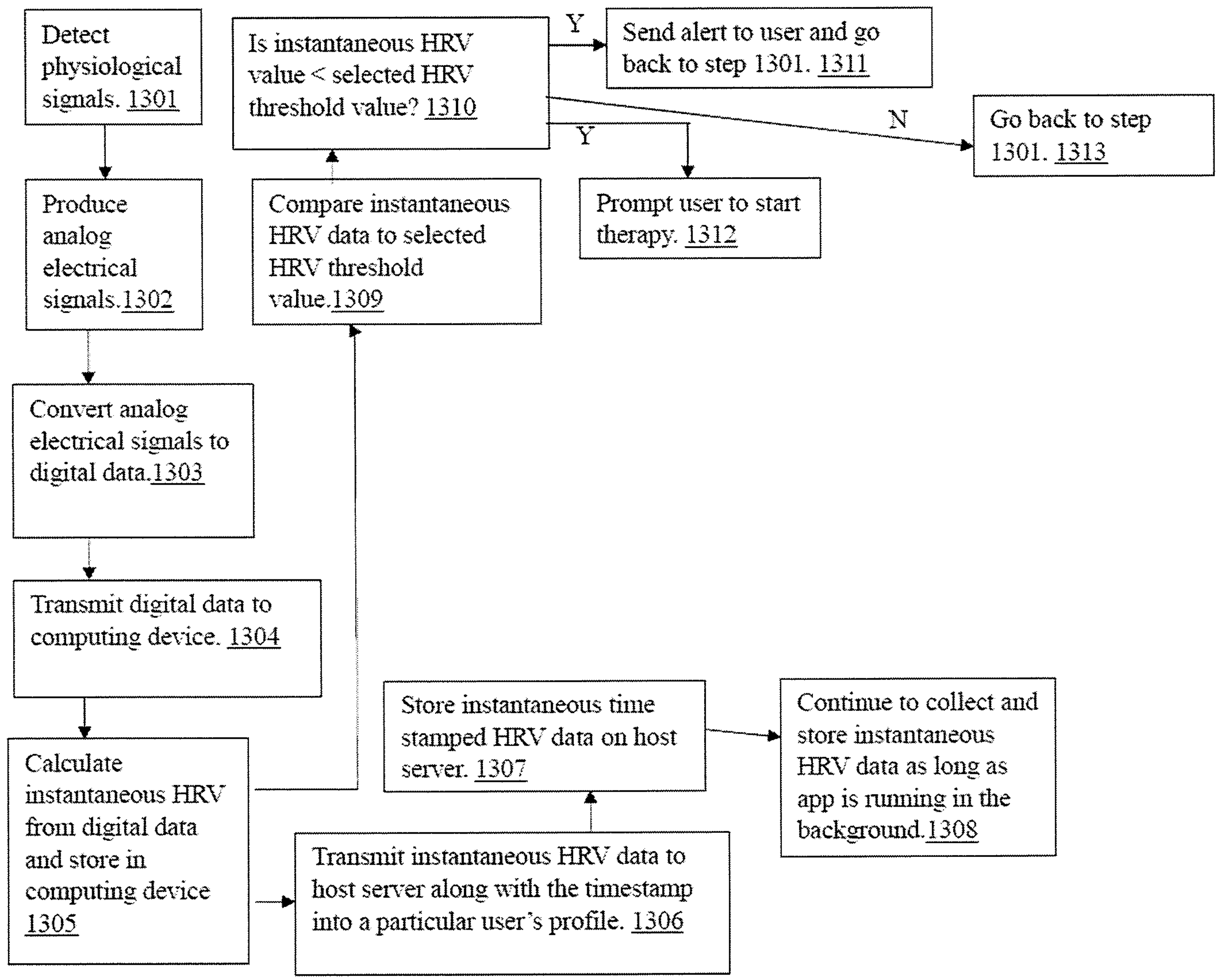

2200
2202
Construct a SoundPackage™
2203
Name
20240208103116
Rename
Save
2204
Base Tone
432 Hz
2205
Beat Tone
10Hz
2206
Overlay
ON
OFF
2207
Category
Random
Synth
2208
Name
Random
UltraMix
2209
Emphasis
200
2210
Background
ON
OFF
2211
Name
Rain
2212
Emphasis
30
2213
Affirmation
ON
OFF
2214
Category
Relax
2215
Name
CalmMax
2216
Emphasis
50

Figure 8



2203
2204
2201
HISTORY
2202
Sound Package
Total Time
HRV
20240208103116
SET
1:24:01
+4.76
20240208103024
SET
20:04
+2.00
2205
Feb 8. 2024 10:30:30
10:02
+1.50
Feb 8. 2024 10:50:30
10:02
+2.50
20240209092410
SET
0:00
0.00
2200

Figure 9



Detect physiological signals. 1301
Produce analog electrical signals.1302
Convert analog electrical signals to digital data.1303
Transmit digital data to computing device. 1304
Calculate instantaneous HRV from digital data and store in computing device 1305
Transmit instantaneous HRV data to host server along with the timestamp into a particular user's profile. 1306
Store instantaneous time stamped HRV data on host server. 1307
Continue to collect and store instantaneous HRV data as long as app is running in the background.1308
Compare instantaneous HRV data to selected HRV threshold value.1309
Is instantaneous HRV value < selected HRV threshold value? 1310
Y
Send alert to user and go back to step 1301. 1311
Y
Prompt user to start therapy. 1312
N
Go back to step 1301. 1313

Figure 10A

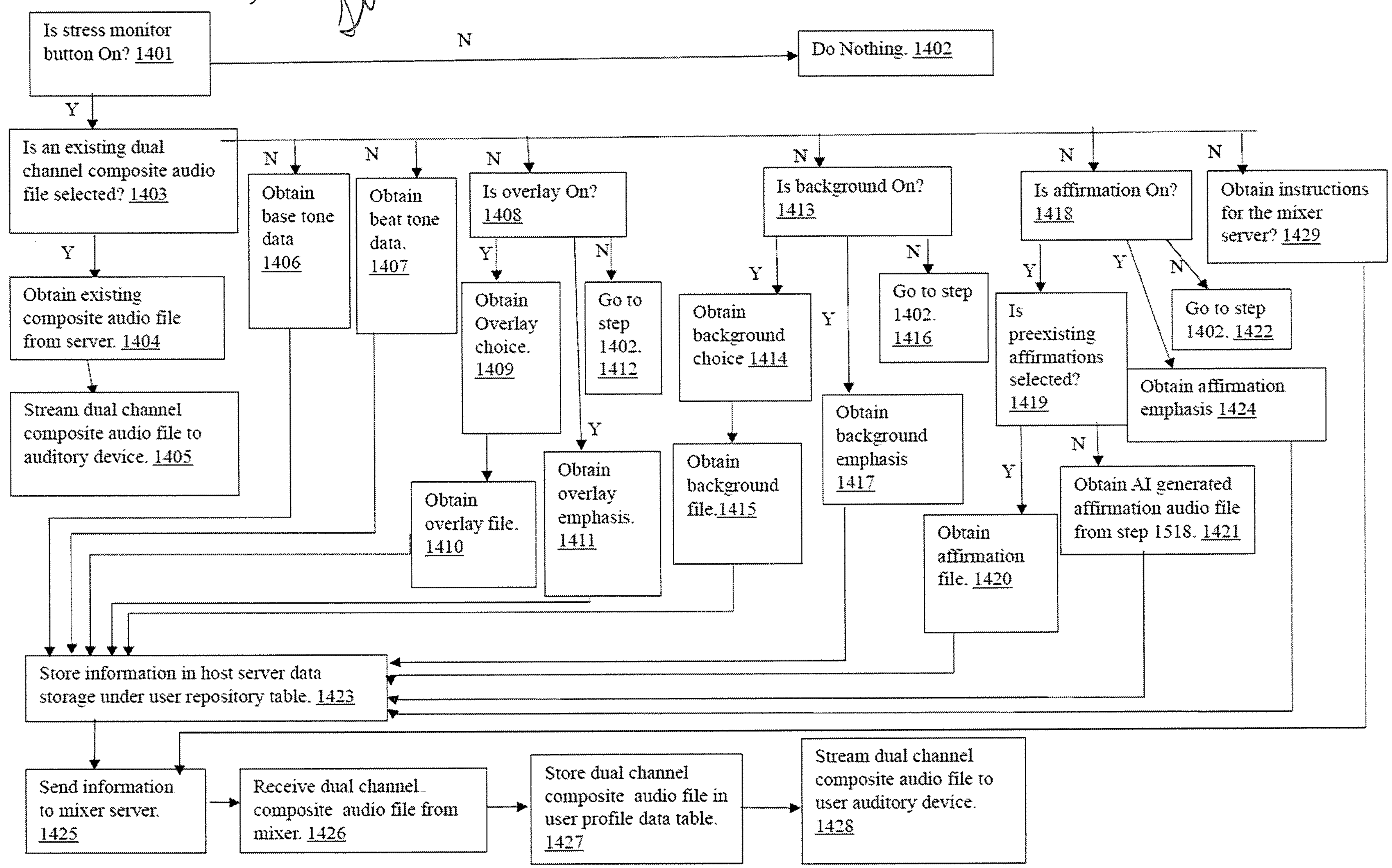
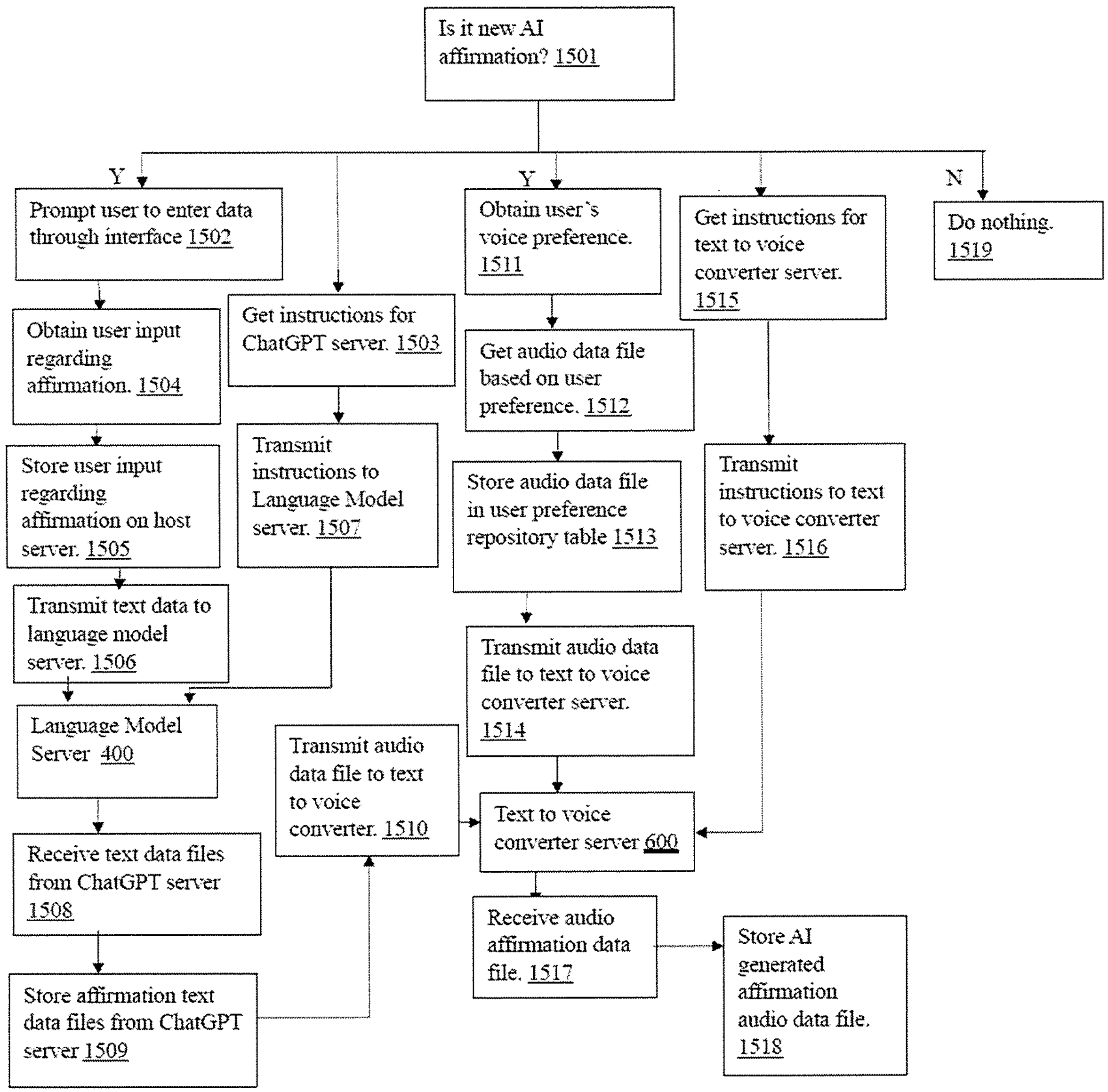

Is stress monitor button On? 1401
N
Do Nothing. 1402
Y
Is an existing dual channel composite audio file selected? 1403
Y
Obtain existing composite audio file from server. 1404
Stream dual channel composite audio file to auditory device. 1405
N
Obtain base tone data 1406
N
Obtain beat tone data. 1407
N
Is overlay On? 1408
Y
Obtain Overlay choice. 1409
Obtain overlay file. 1410
Y
Obtain overlay emphasis. 1411
N
Go to step 1402. 1412
N
Is background On? 1413
Y
Obtain background choice 1414
Obtain background file. 1415
N
Go to step 1402. 1416
Y
Obtain background emphasis 1417
N
Is affirmation On? 1418
Y
Is preexisting affirmations selected? 1419
Y
Obtain affirmation file. 1420
N
Obtain AI generated affirmation audio file from step 1518. 1421
N
Go to step 1402. 1422
Y
Obtain affirmation emphasis 1424
N
Obtain instructions for the mixer server? 1429
Store information in host server data storage under user repository table. 1423
Send information to mixer server. 1425
Receive dual channel composite audio file from mixer. 1426
Store dual channel composite audio file in user profile data table. 1427
Stream dual channel composite audio file to user auditory device. 1428

Figure 10B



Is it new AI affirmation? 1501
Y
Y
N
Prompt user to enter data through interface 1502
Obtain user input regarding affirmation. 1504
Store user input regarding affirmation on host server. 1505
Transmit text data to language model server. 1506
Language Model Server 400
Receive text data files from ChatGPT server 1508
Store affirmation text data files from ChatGPT server 1509
Get instructions for ChatGPT server. 1503
Transmit instructions to Language Model server. 1507
Transmit audio data file to text to voice converter. 1510
Obtain user's voice preference. 1511
Get audio data file based on user preference. 1512
Store audio data file in user preference repository table 1513
Transmit audio data file to text to voice converter server. 1514
Text to voice converter server 600
Receive audio affirmation data file. 1517
Store AI generated affirmation audio data file. 1518
Get instructions for text to voice converter server. 1515
Transmit instructions to text to voice converter server. 1516
Do nothing. 1519

Figure 10C

ChatGPT

1. "I trust in my abilities to handle any challenge that comes my way."
2. "I am capable, confident, and calm in the face of pressure."
3. "I release tension with every breath I take."
4. "My work environment is supportive and conducive to my well-being."
5. "I prioritize my tasks and focus on what truly matters."
6. "I am resilient and adaptable to change."
7. "I embrace moments of relaxation throughout my day."
8. "I set healthy boundaries to maintain balance in my work-life."
9. "I am grateful for the opportunities and experiences that come my way."
10. "I take breaks when needed to recharge and refocus."
11. "I approach challenges with a positive mindset and a sense of curiosity."
12. "I let go of perfectionism and accept that mistakes are part of growth."
13. "I communicate effectively and assertively to manage expectations."
14. "I seek support from colleagues and mentors when necessary."
15. "I am worthy of success and recognition for my efforts."
16. "I cultivate a sense of humor to lighten stressful situations."
17. "I celebrate my achievements, no matter how small."
18. "I practice mindfulness to stay present and grounded."
19. "I nourish my body with healthy food and movement."
20. "I delegate tasks to alleviate overwhelm and foster collaboration."
21. "I choose to see setbacks as opportunities for learning and growth."
22. "I visualize success and remain focused on my goals."
23. "I disconnect from work at the end of the day to recharge and relax."
24. "I am in control of my reactions and responses to stress."
25. "I take time to appreciate the beauty in my surroundings."
26. "I create a serene workspace that promotes productivity and peace."
27. "I release tension by practicing deep breathing exercises."
28. "I schedule regular self-care activities to nurture my well-being."
29. "I let go of what I cannot control and focus on what I can influence."
30. "I trust in the process and believe in my ability to overcome challenges."

Figure 11

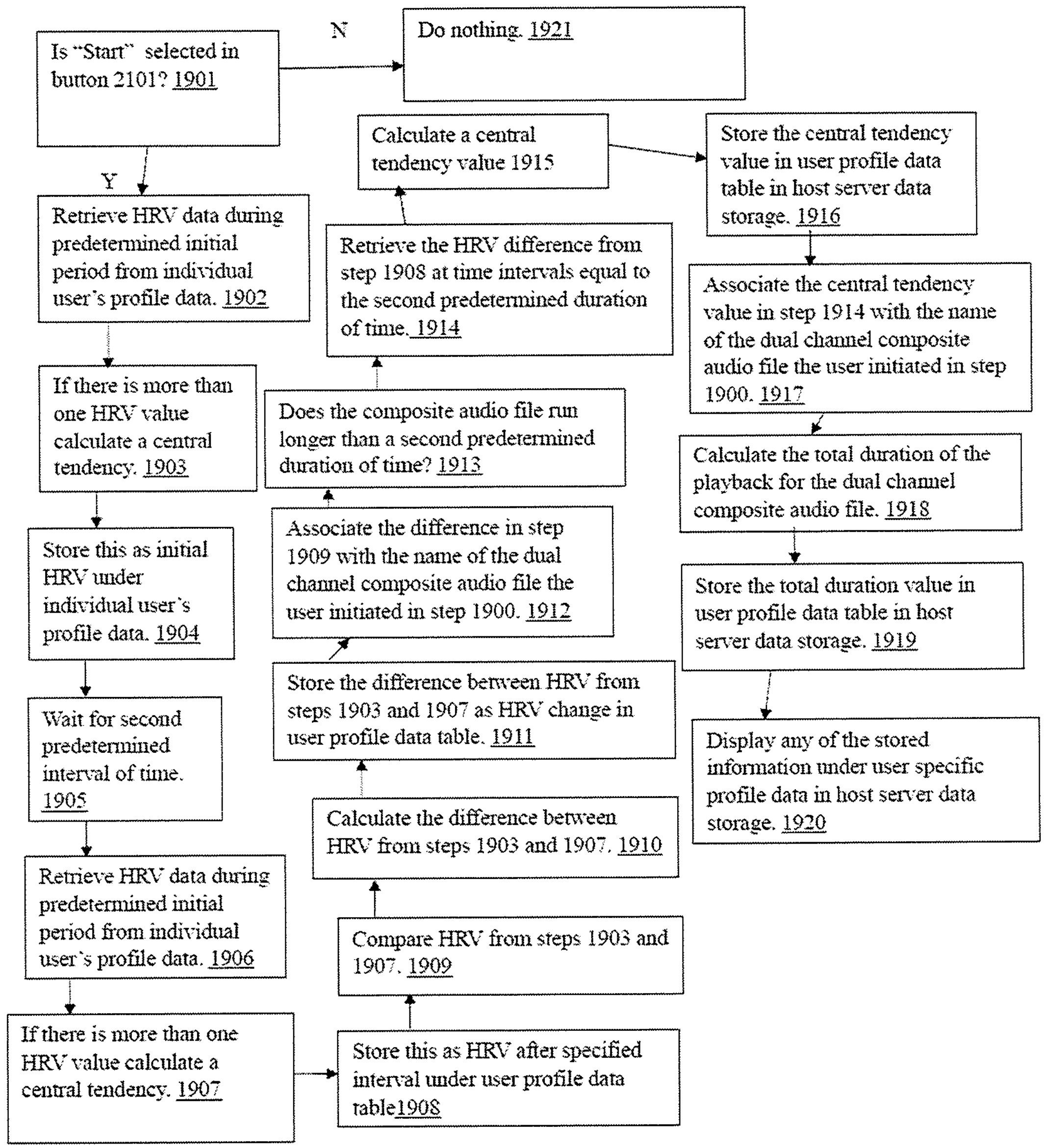

Is "Start" selected in button 2101? 1901
N
Do nothing. 1921
Y
Retrieve HRV data during predetermined initial period from individual user's profile data. 1902
If there is more than one HRV value calculate a central tendency. 1903
Store this as initial HRV under individual user's profile data. 1904
Wait for second predetermined interval of time. 1905
Retrieve HRV data during predetermined initial period from individual user's profile data. 1906
If there is more than one HRV value calculate a central tendency. 1907
Store this as HRV after specified interval under user profile data table1908
Compare HRV from steps 1903 and 1907. 1909
Calculate the difference between HRV from steps 1903 and 1907. 1910
Store the difference between HRV from steps 1903 and 1907 as HRV change in user profile data table. 1911
Associate the difference in step 1909 with the name of the dual channel composite audio file the user initiated in step 1900. 1912
Does the composite audio file run longer than a second predetermined duration of time? 1913
Retrieve the HRV difference from step 1908 at time intervals equal to the second predetermined duration of time. 1914
Calculate a central tendency value 1915
Store the central tendency value in user profile data table in host server data storage. 1916
Associate the central tendency value in step 1914 with the name of the dual channel composite audio file the user initiated in step 1900. 1917
Calculate the total duration of the playback for the dual channel composite audio file. 1918
Store the total duration value in user profile data table in host server data storage. 1919
Display any of the stored information under user specific profile data in host server data storage. 1920

Figure 12A

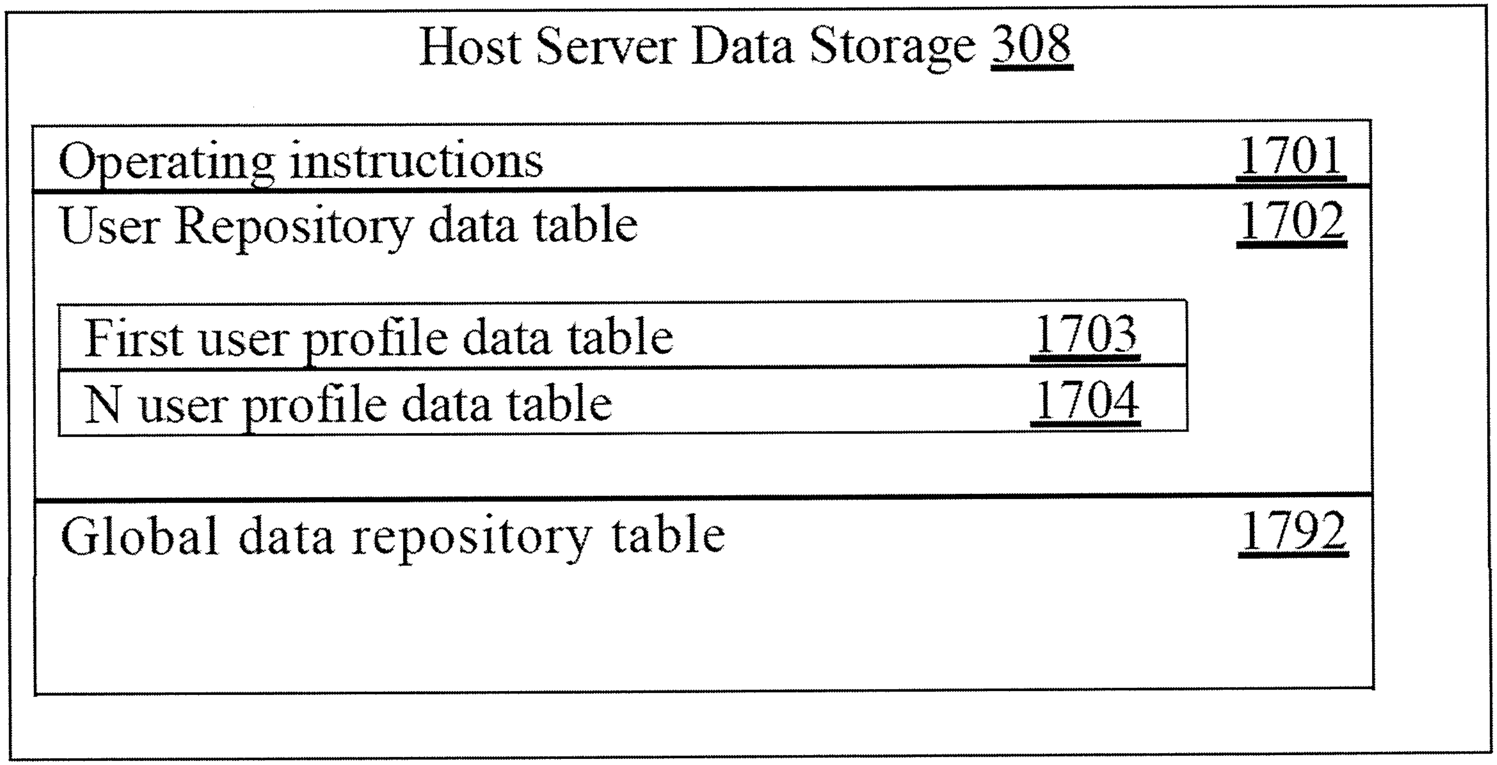

Host Server Data Storage 308
Operating instructions 1701
User Repository data table 1702
First user profile data table 1703
N user profile data table 1704
Global data repository table 1792

Figure 12B

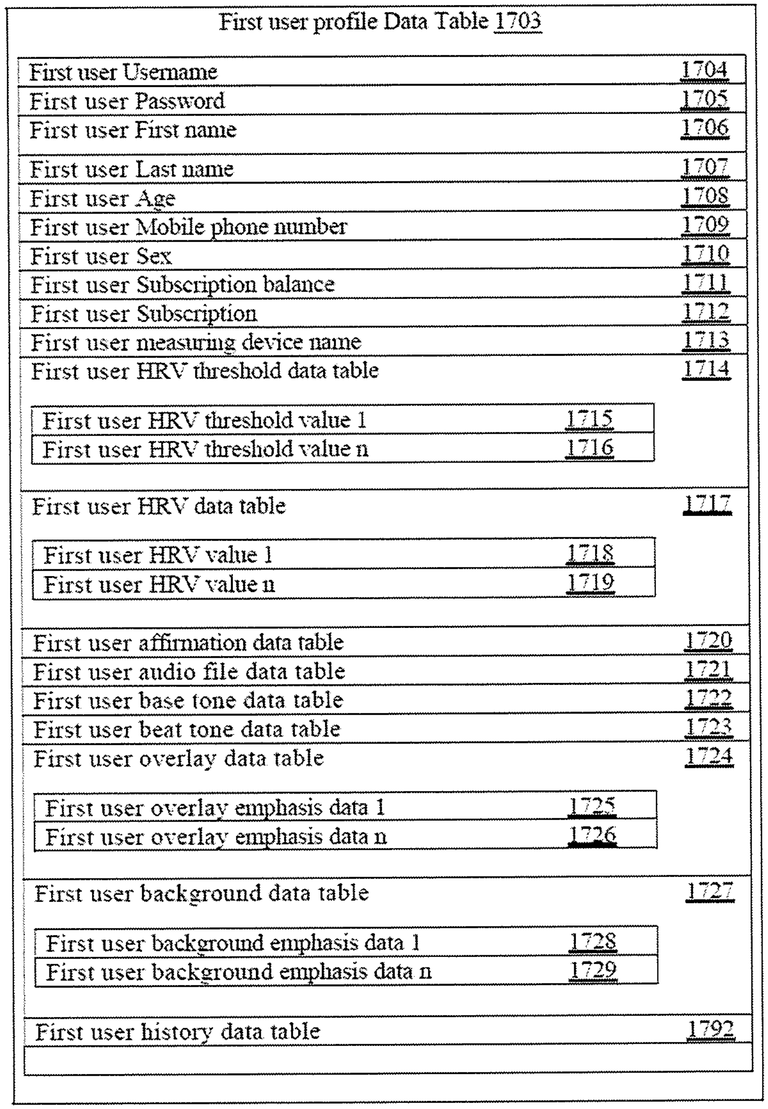

First user profile Data Table 1703
First user Username 1704
First user Password 1705
First user First name 1706
First user Last name 1707
First user Age 1708
First user Mobile phone number 1709
First user Sex 1710
First user Subscription balance 1711
First user Subscription 1712
First user measuring device name 1713
First user HRV threshold data table 1714
First user HRV threshold value 1 1715
First user HRV threshold value n 1716
First user HRV data table 1717
First user HRV value 1 1718
First user HRV value n 1719
First user affirmation data table 1720
First user audio file data table 1721
First user base tone data table 1722
First user beat tone data table 1723
First user overlay data table 1724
First user overlay emphasis data 1 1725
First user overlay emphasis data n 1726
First user background data table 1727
First user background emphasis data 1 1728
First user background emphasis data n 1729
First user history data table 1792

Figure 12C

First user audio file data table 1721	
First user first dual channel composite audio file data	1730
First user nth dual channel composite audio file data	1731
First user first audio file data	1798a
First user nth audio file data	1798b

Figure 12D

First user base tone data table 1722	
First user first base tone data	1732
First user nth base tone data	1733

Figure 12E

First user beat tone data table 1723	
First user first beat tone data	1734
First user nth beat tone data	1735

Figure 12F

First user affirmation data table 1720

First user first textbox input data	1736
First user n textbox input data	1737
First user first AI generated affirmation text data	1738
First user nth AI generated affirmation text data	1739
First user first text to voice converted audio file data	1740
First user nth text to voice converted audio file data	1741
First user first affirmation name data	1742
First user nth affirmation name data	1743
First user first affirmation voice data	1744
First user nth affirmation voice data	1745
First user first affirmation emphasis data	1746
First user nth affirmation emphasis data	1747

Figure 12G

First user history data table 1792

First user first history data	1793
First user nth history data	1794
First user first sound package name	17100
First user nth sound package name	17101
First user first HRV improvement	17102
First user nth HRV improvement	17103
First user first total duration	17104
First user nth total duration	17105
First user first HRV	17106
First user nth HRV	17107

Figure 12H

N user profile Data Table 1704

N-user Username	1748
N-user Password	1749
N-user First name	1750
N-user Last name	1751
N-user Age	1752
N-user Mobile phone number	1753
N-user Sex	1754
N-user Subscription balance	1755
N-user Subscription	1756
N-user Measuring Device name	1757
N-user HRV threshold data	1758
N-use HRV threshold value 1	1759
N-user HRV threshold value n	1760
N-user HRV data table	1761
N-user HRV value 1	1762
N-user HRV value n	1763
N-user Affirmation data table	1764
N-user audio file data table	1765
N-user base tone data table	1766
N-user beat tone data table	1767
N-user overlay data table	1768
N-user overlay emphasis data 1	1769
N-user overlay emphasis data n	1770
N-user background data table	1771
N-user background emphasis data 1	1772
N-user background emphasis data n	1773
N-user history data table	1795

Figure 12I

N-user audio file data table 1765	
N-user first dual channel composite audio file data	1774
N-user nth dual channel composite audio file data	1775
N-user first audio file data	1799a
N-user first audio file data	1799b

Figure 12J

N-user base tone data table 1766	
N-user first base tone data	1776
N-user nth base tone data	1777

Figure 12K

N-user beat tone data table 1767	
N-user first history data	1778
N-user nth history data	1789

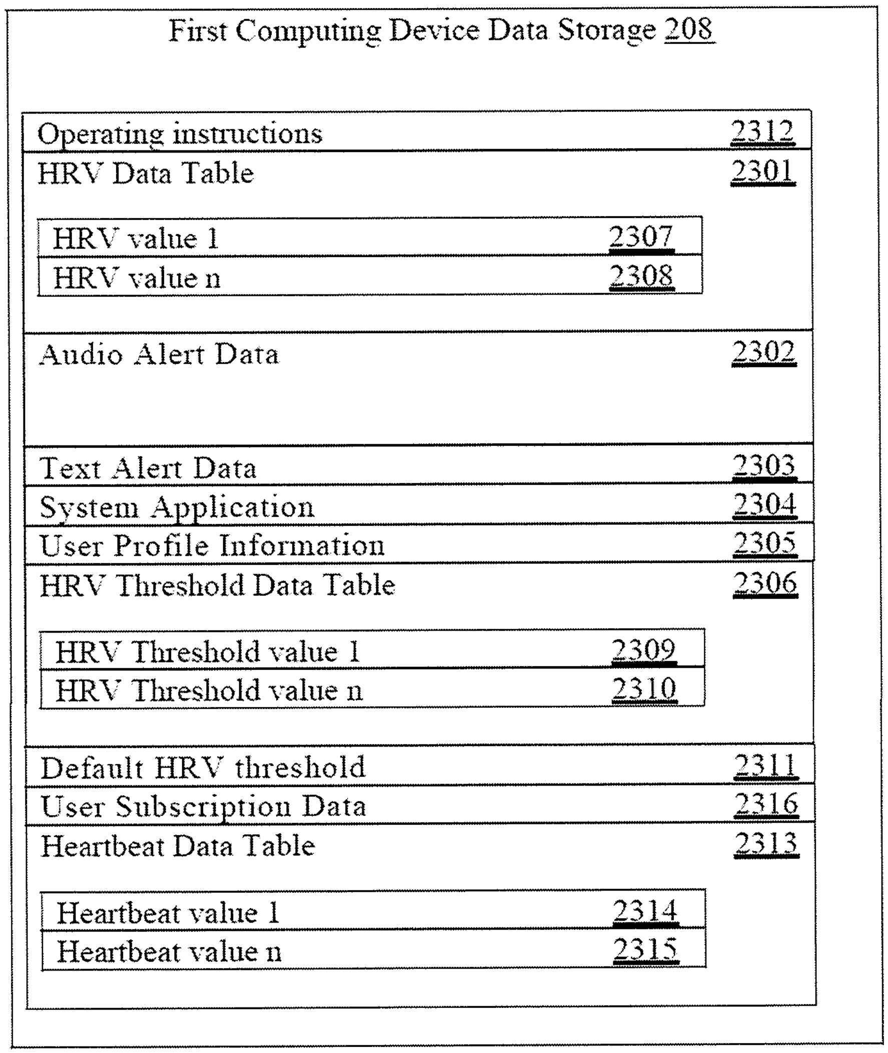
Figure 13

Global data repository table 1792

Global audio file data table	1800
Background audio data files	1801
Background category data files	1808
Background default emphasis data files	1802
Overlay audio data files	1803
Overlay category data files	1809
Overlay default emphasis data files	1804
Affirmation audio data files	1805
Affirmation category data files	1811
Affirmation default emphasis data files	1806
Affirmations voice audio data files	1807
Premium overlay audio data files	1812
Premium background audio data files	1813
Premium affirmation audio data files	1814

Global text alert data files	1810
Global base tone data files	1820
Global beat tone data files	1830
Global audio alert data files	1840

Figure 14



First Computing Device Data Storage 208
Operating instructions 2312
HRV Data Table 2301
HRV value 1 2307
HRV value n 2308
Audio Alert Data 2302
Text Alert Data 2303
System Application 2304
User Profile Information 2305
HRV Threshold Data Table 2306
HRV Threshold value 1 2309
HRV Threshold value n 2310
Default HRV threshold 2311
User Subscription Data 2316
Heartbeat Data Table 2313
Heartbeat value 1 2314
Heartbeat value n 2315

Figure 15

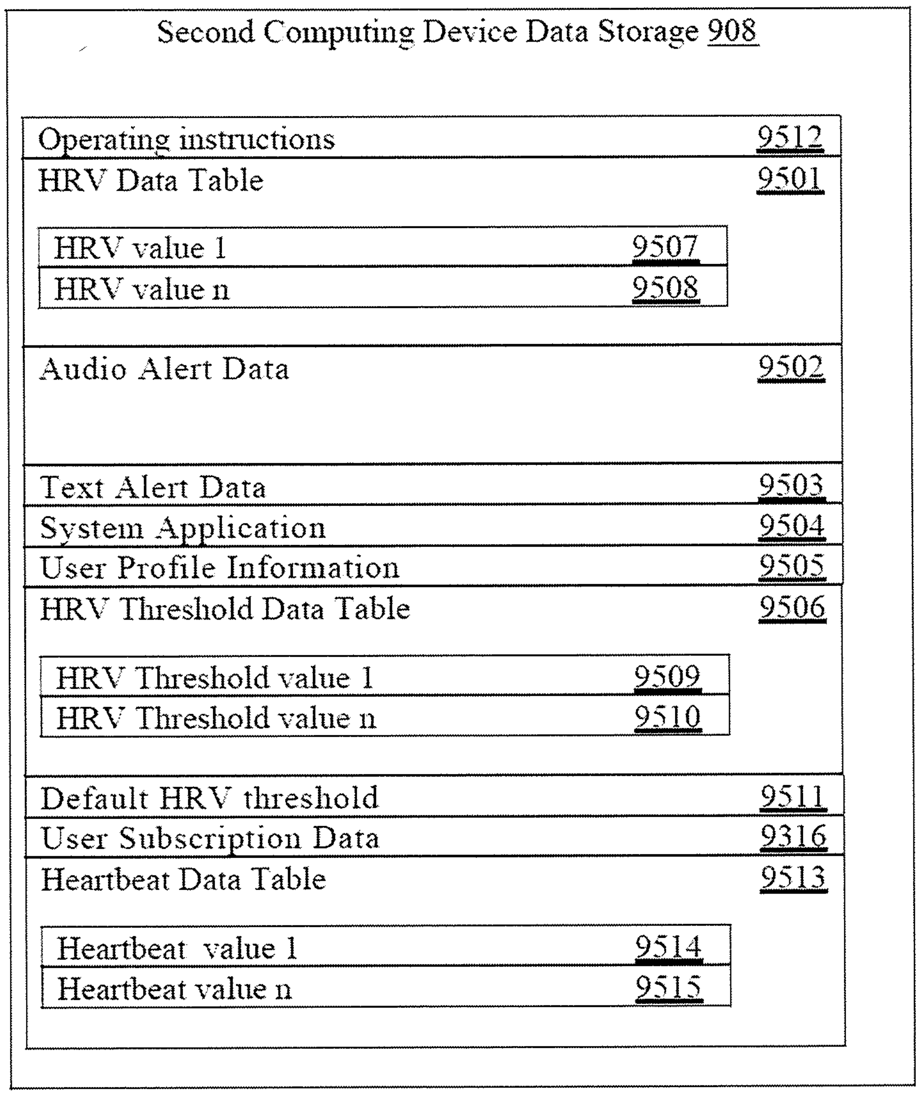
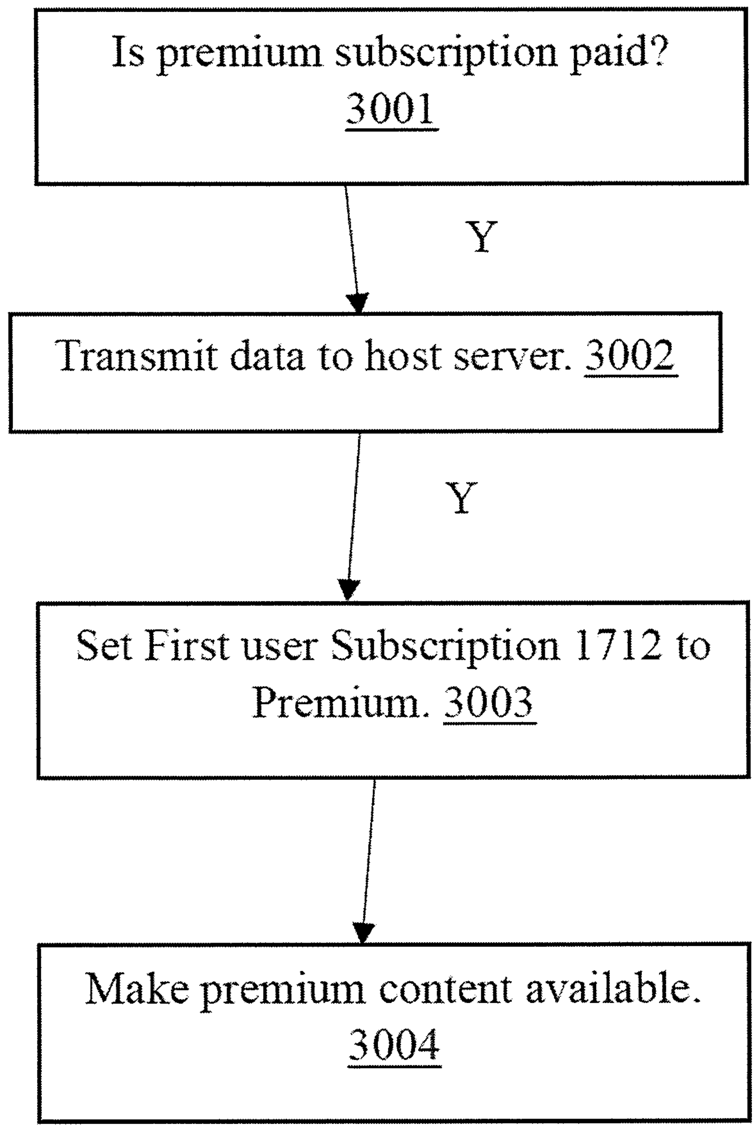

Second Computing Device Data Storage 908
Operating instructions 9512
HRV Data Table 9501
HRV value 1 9507
HRV value n 9508
Audio Alert Data 9502
Text Alert Data 9503
System Application 9504
User Profile Information 9505
HRV Threshold Data Table 9506
HRV Threshold value 1 9509
HRV Threshold value n 9510
Default HRV threshold 9511
User Subscription Data 9316
Heartbeat Data Table 9513
Heartbeat value 1 9514
Heartbeat value n 9515

Figure 16


Is premium subscription paid? 3001
Y
Transmit data to host server. 3002
Y
Set First user Subscription 1712 to Premium. 3003
Make premium content available. 3004