A

TITLE OF THE INVENTION

A Method and System for Determining Cognitive Parameter Values to be Displayed on a User Interface and Subsequently Initiating a Transfer of Cryptocurrency

Overall good
- new sections are good
- claims could still use some work
- Disclosed Emotion + Focus

BACKGROUND OF THE INVENTION

[0001] The present invention generally relates to a communication system and methods. More particularly, the present invention relates to a communication system and methods having a central server in communication with display devices, measurement devices, and a cryptocurrency exchange server.

[0002] Nontraditional combat sports and e-sports have become increasingly popular in recent years. Participants enjoy opportunities to compete from the comfort of their own homes against competitors of their choosing. Additionally, advancements in brain computer interface (BCI) technology have created a new market where consumers can purchase advanced BCI devices that have historically been cost prohibitive and reserved for medical professionals. Using advanced detection algorithms, a BCI device collects cognitive parameter data of its user and streams that data to connected devices so that the user can view real-time performance metrics, modulate an application, or command objects. Furthermore, the use of cryptocurrency in betting markets has become increasingly popular. Bettors enjoy secure and efficient transactions associated with blockchain technology, making cryptocurrency ideal for competitions.

[0003] An electronic device and a payment method are disclosed in patent US 10, 846,695 B2 by Kim et al. The electronic device includes, and the payment method involves, a first communication circuitry and a second communication circuitry configured to support a first payment function and a second payment function, respectively, and a processor configured to connect with the first communication circuitry and the second communication circuitry. A first user interface is outputted corresponding

to a payment request to obtain payment related information, and a second user interface is outputted based on the payment related information.

[0004] Systems, methods, and an apparatus for enhanced headsets are disclosed in patent US 11,128,636 B1 by Jorasch et al. A headset captures data about a user of the headset using a set of electrodes. The data pertains to ascertaining aspects of the user such as the user's identity, competence, health, and state of mind. Using the data, a determination is made about an aspect of the user by comparing the data to a stored threshold, and the user may be granted or denied access to a resource.

[0005] Non-invasive brain and body injury and vital sign assessment monitors and methods for providing Internet-enabled care and recovery services for related conditions and injuries are disclosed in publication US 2020/0143085 A1 by Cooner. Sensors may be enclosed in a head wrap or may be worn on other parts of the body such as the wrist or ankle. Brain trauma, stroke, and other related injuries can be detected. Biometric sensor arrays can be used as part of an Internet of Things system that may utilize a blockchain or distributed ledger technology for storage of sensor data.

[0006] A computer implemented method for analyzing electroencephalogram signals is disclosed in publication US 2021/0290137 A1 by Starr. The computer implemented method involves capturing and analyzing electroencephalogram signals using a plurality of sensors configured to contact a skull. One or more computer memory units store computer instructions and data, and one or more processors cluster the electroencephalogram signals using stored objective data and added subjective data including patient profile data. The output is clustered data results and a medical

diagnosis, assessment, plan, forms, or recommendations based on the clustered data results. An option is presented enabling an expert to correct or verify the diagnosis.

BRIEF SUMMARY OF THE INVENTION

[0007] One or more of the embodiments of the present invention provide a system and methods for conducting a cognitive parameter-based transfer of cryptocurrency.

[0008] The cognitive parameter-based cryptocurrency transfer system comprises a first measurement device, a second measurement device, a first display device, a second display device, a central server, and a cryptocurrency exchange server. The first measurement device is communicatively coupled to the first display device, and the first display device is communicatively coupled to the central server. The second measurement device is communicatively coupled to the second display device, and the second display device is communicatively coupled to the central server. The central server is communicatively coupled to the cryptocurrency exchange server.

[0009] The first measurement device includes a first sensor, which detects a first brainwave signal from a first user of the first measurement device. The first measurement device determines a first electroencephalogram (EEG) signal from the first brainwave signal and determines a first cognitive parameter value from the first EEG signal. The first measurement device transmits the first cognitive parameter value to the first display device, which transmits the first cognitive parameter value to the central server. The second measurement device includes a second sensor, which detects a second brainwave signal from a second user of the second measurement device. The second measurement device determines a second EEG signal from the second brainwave signal and determines a second cognitive parameter value from the second EEG signal. The second

measurement device transmits the second cognitive parameter value to the second display device, which transmits the second cognitive parameter value to the central server.

[0010] The central server, which includes a central server processor, receives the first cognitive parameter value and the second cognitive parameter value. The central server processor sums the first cognitive parameter value with the first current total cognitive parameter score, which is the summation of previously acquired first cognitive parameter values, to determine an updated first current total cognitive parameter score. Also, the central server processor sums the second cognitive parameter value with the second current total cognitive parameter score, which is the summation of previously acquired second cognitive parameter values, to determine an updated second current total cognitive parameter score. The central server processor determines the highest total cognitive parameter score after a time period out of the updated first current total cognitive parameter score and the updated second current total cognitive parameter score. Upon determining the winner having the highest total cognitive parameter score, the central server processor transmits a notification signal that comprises instructions that instruct a cryptocurrency exchange server to transfer a first amount of cryptocurrency from the first user and a second amount of cryptocurrency from the second user that are held in a central wallet in the cryptocurrency exchange server to the public address of the winner.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] Figure 1 illustrates a cognitive parameter-based cryptocurrency transfer system.

[0012] Figure 2 shows a schematic illustrating the use of a first measurement device to determine a first cognitive parameter value and a second measurement device to determine a second cognitive parameter value.

[0013] Figure 3 illustrates a flowchart of a process for configuring a cognitive parameter-based cryptocurrency transfer through challenge settings.

[0014] Figure 4 illustrates a flowchart of a process for determining a first cognitive parameter value and a second cognitive parameter value, determining the highest total cognitive parameter score, and transmitting a notification signal to transfer cryptocurrency.

[0015] Figure 5 illustrates a flowchart of a process for conducting a cognitive parameter-based cryptocurrency transfer, which comprises transferring cryptocurrency upon determining the highest total cognitive parameter score at the conclusion of a challenge.

[0016] Figure 6 illustrates a challenge status display.

[0017] Figure 7 illustrates a home screen.

[0018] Figure 8 illustrates a challenge settings screen.

[0019] Figure 9 illustrates a user profile screen.

[0020] Figure 10 illustrates a flowchart of a process for determining first team cognitive parameter values and second team cognitive parameter values, determining the highest

team total cognitive parameter score, and transmitting a notification signal to transfer cryptocurrency.

DETAILED DESCRIPTION OF THE INVENTION

[0021] Figure 1 illustrates a cognitive parameter-based cryptocurrency transfer system 100. The cognitive parameter-based cryptocurrency transfer system 100 includes a first measurement device 110, a second measurement device 120, a first display device 130, a second display device 140, a central server 150, and a cryptocurrency exchange server (CES) 170.

[0022] The first measurement device 110 includes a first sensor 111, a first measurement device transceiver 113, a first measurement device memory 115, and a first measurement device processor 116. As used herein, the term "memory" means a computer readable storage medium. The first sensor 111 includes a first analogue-to-digital converter (ADC) 112. The first measurement device memory 115 includes a first measurement device identifier 114.

[0023] The second measurement device 120 includes a second sensor 121, a second measurement device transceiver 123, a second measurement device memory 125, and a second measurement device processor 126. The second sensor 121 includes a second analogue-to-digital converter (ADC) 122. The second measurement device memory 125 includes a second measurement device identifier 124.

[0024] The first display device 130 includes a first user interface 131, a first display device processor 132, a first display device transceiver 133, and a first display device memory 134. The first display device memory 134 includes a first measurement device identifier 114.

[0025] The second display device 140 includes a second user interface 141, a second display device processor 142, a second display device transceiver 143, and a second display device memory 144. The second display device memory 144 includes a second measurement device identifier 124.

[0026] The central server 150 includes a central server processor 151, a central server transceiver 152, and a central server memory 153. The central server processor 151 includes a central server internal clock 159. The central server memory 153 includes a user profile data 154, a cognitive parameter score data 155, a challenge data 156, a cryptocurrency data 157, a user current cognitive parameter data 158, an announcements data 160, and a messages data 161.

[0027] The cryptocurrency exchange server (CES) 170 includes a cryptocurrency exchange server (CES) transceiver 175, a cryptocurrency exchange server (CES) processor 171, a central wallet 174, a first display device user wallet 172, and a second display device user wallet 173.

[0028] In the cognitive parameter-based cryptocurrency transfer system 100, the first measurement device 110 is communicatively coupled to the first display device 130 through a first network connection 180. In one embodiment, the first network connection 180 is Bluetooth. The first display device 130 is communicatively coupled to the central server 150 through a first server network connection 195. In one embodiment, the first server network connection 195 is a Wi-Fi connection. The second measurement device 120 is communicatively coupled to the second display device 140 through a second network connection 190. In one embodiment, the second network connection 190 is Bluetooth. The second display device 140 is communicatively coupled to the central

server 150 through a second server network connection 197. In one embodiment, the second server network connection 197 is a Wi-Fi connection. The cryptocurrency exchange server (CES) 170 is communicatively coupled to the central server 150 through a cryptocurrency network connection 199. In one embodiment, the cryptocurrency network connection 199 is the Internet.

[0029] In one embodiment of the first measurement device 110, the first sensor 111 is electronically coupled with the first analogue-to-digital converter (ADC) 112. The first sensor 111 is electronically coupled with the first measurement device processor 116. The first measurement device memory 115 is electronically coupled with the first measurement device processor 116. The first measurement device processor 116 is electronically coupled with the first measurement device transceiver 113.

[0030] In one embodiment of the first display device 130, the first display device transceiver 133 is electronically coupled with the first display device processor 132. The first display device memory 134 is electronically coupled with the first display device processor 132. The first display device processor 132 is electronically coupled with the first user interface 131.

[0031] In one embodiment of the second measurement device 120, the second sensor 121 is electronically coupled with the second analogue-to-digital converter (ADC) 122. The second sensor 121 is electronically coupled with the second measurement device processor 126. The second measurement device memory 125 is electronically coupled with the second measurement device processor 126. The second measurement device processor 126 is electronically coupled with the second measurement device transceiver 123.

[0032] In one embodiment of the second display device 140, the second display device transceiver 143 is electronically coupled with the second display device processor 142. The second display device memory 144 is electronically coupled with the second display device processor 142. The second display device processor 142 is electronically coupled with the second user interface 141.

[0033] In one embodiment of the central server 150, the central server transceiver 152 is electronically coupled to the central server processor 151. The central server memory 153 is electronically coupled to the central server processor 151. The central server transceiver 152 is electronically coupled to the central server memory 153.

[0034] In one embodiment of the cryptocurrency exchange server (CES) 170, the cryptocurrency exchange server (CES) transceiver 175 is electronically coupled to the cryptocurrency exchange server (CES) processor 171. The cryptocurrency exchange server (CES) processor 171 is electronically coupled to the central wallet 174. The central wallet 174 is electronically coupled to the first display device user wallet 172. The central wallet 174 is electronically coupled to the second display device user wallet 173.

[0035] In operation, the cognitive parameter-based cryptocurrency transfer system 100 involves six primary components: the first measurement device 110, the first display device 130, the second measurement device 120, the second display device 140, the central server 150, and the cryptocurrency exchange server (CES) 170. In one embodiment, the first measurement device 110 is an Emotive Insight headset. In one embodiment, the second measurement device 120 is an Emotive Insight headset. In one embodiment, the first display device 130 is a smartphone. In one embodiment, the second

display device 140 is a smartphone. In one embodiment, the cryptocurrency exchange server (CES) 170 is Coinbase.

[0036] The first sensor 111 detects a first brainwave signal of a first user of the first measurement device 110 using electroencephalogram (EEG) channels. In one embodiment, the first sensor 111 is an electroencephalogram (EEG) semi-dry polymer sensor comprising five channels named AF3, AF4, T7, T8, and Pz. As used herein, the term "electroencephalogram (EEG) semi-dry polymer sensor" means an EEG sensor that releases an electrolyte for skin hydration during use, unless specifically stated otherwise. In one embodiment, a first brainwave signal is detected at about every 0.5 seconds. Cited herein are numerical ranges and numerical values. As used herein, the term "about" means ± 10% of the recited value, unless specifically stated otherwise. The first sensor 111 determines a first analog EEG signal from the first brainwave signal of the first user of the first measurement device 110. The first sensor 111 transmits the first analog EEG signal to the first analogue-to-digital converter (ADC) 112. The first analogue-to-digital converter (ADC) 112 converts the first analog EEG signal to a first digital EEG signal 250 (see Figure 2). In one embodiment, the first analogue-to-digital converter (ADC) 112 conducts the conversion process using a sequential sampling rate of 128 samples per second and a digital 5th order Sinc filter. As used herein, the term "Sinc filter" means an idealized filter that removes all frequency components above a given cutoff frequency without affecting lower frequencies. The first sensor 111 transmits the first digital EEG signal 250 to the first measurement device processor 116. The first measurement device processor 116 determines a first cognitive parameter value from the first digital EEG signal 250. In one embodiment, the first cognitive parameter value is a numerical integer

from 1 to 100 for the cognitive parameter of focus as determined by the Emotiv Insight headset. The first measurement device processor 116 transmits the first cognitive parameter value to the first measurement device transceiver 113. The first measurement device identifier 114 is transmitted to the first measurement device transceiver 113. The first measurement device transceiver 113 transmits the first cognitive parameter value to the first display device transceiver 133 through the first network connection 180. The first measurement device transceiver 113 transmits the first measurement device identifier 114 to the first display device transceiver 133 through the first network connection 180.

[0037] The first display device transceiver 133 receives the first cognitive parameter value and the first measurement device identifier 114. The first display device transceiver 133 transmits the first cognitive parameter value and the first measurement device identifier 114 to the central server transceiver 152 through the first server network connection 195. The first display device transceiver 133 transmits the first measurement device identifier 114 to the first display device memory 134 for storage.

[0038] The second sensor 121 detects a second brainwave signal of a second user of the second measurement device 120 using EEG channels. In one embodiment, the second sensor 121 is an electroencephalogram (EEG) semi-dry polymer sensor comprising five channels named AF3, AF4, T7, T8, and Pz. In one embodiment, a second brainwave signal is detected at about every 0.5 seconds. The second sensor 121 determines a second analog EEG signal from the second brainwave signal of the second user of the second measurement device 120. The second sensor 121 transmits the second analog EEG signal to the second analogue-to-digital converter (ADC) 122. The second analogue-to-digital converter (ADC) 122 converts the second analog EEG signal to a second digital EEG

signal 260 (see Figure 2). In one embodiment, the second analogue-to-digital converter (ADC) 122 conducts the conversion process using a sequential sampling rate of 128 samples per second and a digital 5th order Sinc filter. The second sensor 121 transmits the second digital EEG signal 260 to the second measurement device processor 126. The second measurement device processor 126 determines a second cognitive parameter value from the second digital EEG signal 260. In one embodiment, the second cognitive parameter value is a numerical integer from 1 to 100 for the cognitive parameter of focus as determined by the Emotiv Insight headset. The second measurement device processor 126 transmits the second cognitive parameter value to the second measurement device transceiver 123. The second measurement device identifier 124 is transmitted to the second measurement device transceiver 123. The second measurement device transceiver 123 transmits the second cognitive parameter value to the second display device transceiver 143 through the second network connection 190. The second measurement device transceiver 123 transmits the second measurement device identifier 124 to the second display device transceiver 143 through the second network connection 190.

[0039] The second display device transceiver 143 receives the second cognitive parameter value and the second measurement device identifier 124. The second display device transceiver 143 transmits the second cognitive parameter value and the second measurement device identifier 124 to the central server transceiver 152 through the second server network connection 197. The second display device transceiver 143 transmits the second measurement device identifier 124 to the second display device memory 144 for storage.

[0040] The central server transceiver 152 receives the first cognitive parameter value, the first measurement device identifier 114, the second cognitive parameter value, and the second measurement device identifier 124. The central server transceiver 152 transmits the first cognitive parameter value, the first measurement device identifier 114, the second cognitive parameter value, and the second measurement device identifier 124 to the central server processor 151.

[0041] The central server memory 153 stores user current cognitive parameter data 158, which includes a first current total cognitive parameter score paired with the first measurement device identifier 114 and a second current total cognitive parameter score paired with the second measurement device identifier 124. In one embodiment, the first current total cognitive parameter score is the summation of previously acquired first cognitive parameter values. In one embodiment, the second current total cognitive parameter score is the summation of previously acquired second cognitive parameter values. The first current total cognitive parameter score paired with the first measurement device identifier 114 and the second current total cognitive parameter score paired with the second measurement device identifier 124 are transmitted to the central server processor 151.

[0042] In one embodiment, the central server processor 151 sums the first cognitive parameter value with the first current total cognitive parameter score to determine an updated first current total cognitive parameter score paired with the first measurement device identifier 114. The updated first current total cognitive parameter score is the summation of at least two first cognitive parameter values. The central server processor 151 sums the second cognitive parameter value with the second current total cognitive

parameter score to determine an updated second current total cognitive parameter score paired with the second measurement device identifier 124. The updated second current total cognitive parameter score is the summation of at least two second cognitive parameter values.

[0043] The updated first current total cognitive parameter score paired with the first measurement device identifier 114 are transmitted from the central server processor 151 to the central server memory 153 to replace the prior first current total cognitive parameter score. The updated second current total cognitive parameter score paired with the second measurement device identifier 124 are transmitted from the central server processor 151 to the central server memory 153 to replace the prior second current total cognitive parameter score.

[0044] The updated first current total cognitive parameter score paired with the first measurement device identifier 114 are transmitted from the central server processor 151 to the central server transceiver 152. The updated second current total cognitive parameter score paired with the second measurement device identifier 124 are transmitted from the central server processor 151 to the central server transceiver 152. The central server transceiver 152 transmits the updated first current total cognitive parameter score paired with the first measurement device identifier 114 and the updated second current total cognitive parameter score paired with the second measurement device identifier 124 to the first display device transceiver 133 through the first server network connection 195. The central server transceiver 152 transmits the updated first current total cognitive parameter score paired with the first measurement device identifier 114 and the updated second current total cognitive parameter score paired with the second measurement

device identifier 124 to the second display device transceiver 143 through the second server network connection 197.

[0045] The first display device transceiver 133 receives the updated first current total cognitive parameter score paired with the first measurement device identifier 114 and the updated second current total cognitive parameter score paired with the second measurement device identifier 124. The first display device transceiver 133 transmits the updated first current total cognitive parameter score paired with the first measurement device identifier 114 and the updated second current total cognitive parameter score paired with the second measurement device identifier 124 to the first display device processor 132. The first display device processor 132 transmits the updated first current total cognitive parameter score and the updated second current total cognitive parameter score for display on the first user interface 131.

[0046] The second display device transceiver 143 receives the updated first current total cognitive parameter score paired with the first measurement device identifier 114 and the updated second current total cognitive parameter score paired with the second measurement device identifier 124. The second display device transceiver 143 transmits the updated first current total cognitive parameter score paired with the first measurement device identifier 114 and the updated second current total cognitive parameter score paired with the second measurement device identifier 124 to the second display device processor 142. The second display device processor 142 transmits the updated first current total cognitive parameter score and the updated second current total cognitive parameter score for display on the second user interface 141.

[0047] In one embodiment, the central server processor 151 determines a winner by determining the highest total cognitive parameter score out of the updated first current total cognitive parameter score and the updated second current total cognitive parameter score after a time period as measured by the central server internal clock 159 (see discussion of Figure 3). The central server processor 151 transmits the highest total cognitive parameter score paired with the winner's measurement device identifier, either the first measurement device identifier 114 or the second measurement device identifier 124, to the central server memory 153 for storage as cognitive parameter score data 155.

[0048] The first user of the first measurement device 110 inputs first user profile data, challenge data 156, and cryptocurrency first user data using the first user interface 131 (see discussion of Figure 3 and Figure 9). The first user interface 131 transmits the first user profile data, challenge data 156, and cryptocurrency first user data to the first display device processor 132. The first display device processor 132 transmits the first user profile data, challenge data 156, and cryptocurrency first user data to the first display device transceiver 133. The first display device transceiver 133 transmits the first user profile data, challenge data 156, and cryptocurrency first user data to the central server transceiver 152 through the first server network connection 195. The central server transceiver 152 transmits the first user profile data, challenge data 156, and cryptocurrency first user data to the central server memory 153 for storage.

[0049] The second user of the second measurement device 120 inputs second user profile data, challenge data 156, and cryptocurrency second user data using the second user interface 141. The second user interface 141 transmits the second user profile data, challenge data 156, and cryptocurrency second user data to the second display device

processor 142. The second display device processor 142 transmits the second user profile data, challenge data 156, and cryptocurrency second user data to the second display device transceiver 143. The second display device transceiver 143 transmits the second user profile data, challenge data 156, and cryptocurrency second user data to the central server transceiver 152 through the second server network connection 197. The central server transceiver 152 transmits the second user profile data, challenge data 156, and cryptocurrency second user data to the central server memory 153 for storage.

[0050] Cryptocurrency first user data associated with the first user of the first measurement device 110 and cryptocurrency second user data associated with the second user of the second measurement device 120 are transmitted from the central server memory 153 to the central server processor 151. The central server processor 151 associates the identification of the winner with either the cryptocurrency first user data or the cryptocurrency second user data. The central server processor 151 transmits a notification signal that comprises instructions that instruct the cryptocurrency exchange server (CES) 170 to take one or more actions. The central server processor 151 transmits the notification signal to the central server transceiver 152. The central server transceiver 152 transmits the notification signal to the cryptocurrency exchange server (CES) transceiver 175 through the cryptocurrency network connection 199.

[0051] The cryptocurrency exchange server (CES) transceiver 175 receives the notification signal. The cryptocurrency exchange server (CES) transceiver 175 transmits the notification signal to the cryptocurrency exchange server (CES) processor 171. The notification signal instructs the cryptocurrency exchange server (CES) processor 171 to transfer the first amount of cryptocurrency and the second amount of cryptocurrency to

the wallet of the winner having the highest total cognitive parameter score, either the first display device user wallet 172 which is associated with the first user of the first measurement device 110 using the first display device 130 or the second display device user wallet 173 which is associated with the second user of the second measurement device 120 using the second display device 140 (see discussion of Figure 5).

[0052] In an alternative embodiment, the first measurement device 110 is an Emotive Epoc X headset.

[0053] In an alternative embodiment, the second measurement device 120 is an Emotive Epoc X headset.

[0054] In an alternative embodiment, the first display device 130 is an electronic tablet or an all-in-one computer comprising a monitor and all desktop components.

[0055] In an alternative embodiment, the second display device 140 is an electronic tablet or an all-in-one computer comprising a monitor and all desktop components.

[0056] In an alternative embodiment, the first network connection 180 is a Wi-Fi connection, an infrared connection, or a wired connection.

[0057] In an alternative embodiment, the second network connection 190 is a Wi-Fi connection, an infrared connection, or a wired connection.

[0058] In an alternative embodiment, the first server network connection 195 is a cellular data connection or an ethernet connection.

[0059] In an alternative embodiment, the second server network connection 197 is a cellular data connection or an ethernet connection.

[0060] In an alternative embodiment, two or more of the following components are merged such that the combined component executes the functions of the individual components from which it was merged: first sensor 111, first analogue-to-digital converter (ADC) 112, first measurement device transceiver 113, first measurement device memory 115, and first measurement device processor 116.

[0061] In an alternative embodiment, two or more of the following components are merged such that the combined component executes the functions of the individual components from which it was merged: second sensor 121, second analogue-to-digital converter (ADC) 122, second measurement device transceiver 123, second measurement device memory 125, and second measurement device processor 126.

[0062] In an alternative embodiment, two or more of the following components are merged such that the combined component executes the functions of the individual components from which it was merged: first user interface 131, first display device processor 132, first display device transceiver 133, and first display device memory 134.

[0063] In an alternative embodiment, two or more of the following components are merged such that the combined component executes the functions of the individual components from which it was merged: second user interface 141, second display device processor 142, second display device transceiver 143, and second display device memory 144.

[0064] In an alternative embodiment, two or more of the following components are merged such that the combined component executes the functions of the individual components from which it was merged: central server processor 151, central server transceiver 152, and central server memory 153.

[0065] In an alternative embodiment, two or more of the following components are merged such that the combined component executes the functions of the individual components from which it was merged: cryptocurrency exchange server (CES) transceiver 175, cryptocurrency exchange server (CES) processor 171, central wallet 174, first display device user wallet 172, and second display device user wallet 173.

[0066] In an alternative embodiment, the first analogue-to-digital converter (ADC) 112 conducts the conversion process using a digital 1st order Sinc filter or a 3rd order Sinc filter.

[0067] In an alternative embodiment, the second analogue-to-digital converter (ADC) 122 conducts the conversion process using a digital 1st order Sinc filter or a 3rd order Sinc filter.

[0068] In an alternative embodiment, the first cognitive parameter value is a numerical integer for the cognitive parameter of excitement, engagement, relaxation, interest, or stress.

[0069] In an alternative embodiment, the second cognitive parameter value is a numerical integer for the cognitive parameter of excitement, engagement, relaxation, interest, or stress.

[0070] In an alternative embodiment, the first cognitive parameter value is a numerical integer for combinations of the cognitive parameters of focus, excitement, engagement, relaxation, interest, and stress.

[0071] In an alternative embodiment, the second cognitive parameter value is a numerical integer for combinations of the cognitive parameters of focus, excitement, engagement, relaxation, interest, and stress.

[0072] In an alternative embodiment, the first current total cognitive parameter score is the average of previously acquired first cognitive parameter values.

[0073] In an alternative embodiment, the second current total cognitive parameter score is the average of previously acquired second cognitive parameter values.

[0074] In an alternative embodiment, the central server processor 151 averages the first cognitive parameter value with the first current total cognitive parameter score to determine an updated first current total cognitive parameter score.

[0075] In an alternative embodiment, the central server processor 151 averages the second cognitive parameter value with the second current total cognitive parameter score to determine an updated second current total cognitive parameter score.

[0076] In an alternative embodiment, a first brainwave signal is detected at an interval of about every 0.1 seconds.

[0077] In an alternative embodiment, a second brainwave signal is detected at an interval of about every 0.1 seconds.

[0078] In an alternative embodiment, the central server processor 151 determines a winner by determining the lowest total cognitive parameter score out of the updated first current total cognitive parameter score and the updated second current total cognitive parameter score after a time period. The central server processor 151 transmits the lowest total cognitive parameter score paired with the winner's measurement device identifier,

either the first measurement device identifier 114 or the second measurement device identifier 124, to the central server memory 153 for storage as cognitive parameter score data 155.

[0079] In an alternative embodiment, the central server processor 151 determines a winner out of the updated first current total cognitive parameter score and the updated second current total cognitive parameter score after a time period as measured by the number of first cognitive parameter values that have been determined each at an interval and subsequently summed and the number of second cognitive parameter values that have been determined each at an interval and subsequently summed.

[0080] Figure 2 shows a schematic 200 illustrating the use of a first measurement device 110 to determine a first cognitive parameter value and a second measurement device 120 to determine a second cognitive parameter value.

[0081] The schematic 200 includes a first measurement device 110 (see also Figure 1), a first digital EEG signal 250, a first display device 130 (see also Figure 1), a second measurement device 120 (see also Figure 1), a second digital EEG signal 260, and a second display device 140 (see also Figure 1).

[0082] The first measurement device 110 is physically coupled to the head of the first user of the first measurement device 110. The second measurement device 120 is physically coupled to the head of the second user of the second measurement device 120. In one embodiment, the first measurement device 110 is an Emotive Insight headset. In one embodiment, the second measurement device 120 is an Emotive Insight headset. The first measurement device 110 is communicatively coupled to the first display device 130 through the first network connection 180 (see Figure 1). In one embodiment, the first

network connection 180 is Bluetooth. The second measurement device 120 is communicatively coupled to the second display device 140 through the second network connection 190 (see Figure 1). In one embodiment, the second network connection 190 is Bluetooth. In one embodiment, the first display device 130 is a smartphone. In one embodiment, the second display device 140 is a smartphone. The first digital EEG signal 250 is determined by the first measurement device 110 internally and is not visible to the first user of the first measurement device 110 or the second user of the second measurement device 120. The second digital EEG signal 260 is determined by the second measurement device 120 internally and is not visible to the second user of the second measurement device 120 or the first user of the first measurement device 110.

[0083] In operation, the first user of the first measurement device 110 establishes the first network connection 180 (see Figure 1) between the first measurement device 110 and the first display device 130 (see subprocess 328 of Figure 3 and discussion of the measurement device button 950 in Figure 9). Additionally, the second user of the second measurement device 120 establishes the second network connection 190 (see Figure 1) between the second measurement device 120 and the second display device 140 (see subprocess 328 of Figure 3 and discussion of the measurement device button 950 in Figure 9).

[0084] Once the challenge commences (see subprocess 330 of Figure 3, subprocess 402 of Figure 4, and subprocess 520 of Figure 5), the first measurement device 110 detects first brainwave signals of the first user of the first measurement device 110 through the first sensor 111, and the second measurement device 120 detects second brainwave

signals from the second user of the second measurement device 120 through the second sensor 121 (see discussion of Figure 1).

[0085] The first sensor 111 determines an analog first EEG signal from the first brainwave signal of the first user of the first measurement device 110, and the first analogue-digital-converter (ADC) 112 then converts the first analog EEG signal to a first digital EEG signal 250 (see discussion of Figure 1). The second sensor 121 determines a second analog EEG signal from the second brainwave signal of the second user of the second measurement device 120, and the second analogue-digital-converter (ADC) 122 then converts the second analog EEG signal to a second digital EEG signal 260 (see discussion of Figure 1). In one embodiment, the first digital EEG signal 250 is not visible on a digital graphical chart but rather remains internal to the first measurement device 110. Further, in one embodiment, the second digital EEG signal 260 is not visible on a digital graphical chart but rather remains internal to the second measurement device 120.

[0086] Using an algorithm called a Fast Fourier Transform, the first measurement device 110 identifies the first digital EEG signal 250 as a first distinct wave with a distinct frequency and the second measurement device 120 identifies the second digital EEG signal 260 as a second distinct wave with a distinct frequency. In one embodiment, the first distinct wave is a Beta wave. In one embodiment, the second distinct wave is a Beta wave. Beta waves have a frequency range of 14 Hertz (Hz) to 30 Hz and are associated with a focused, conscious, attentive, and alert state of mind, with low amplitude beta waves associating with focus and active concentration. Detections of distinct waves were developed based on rigorous experimental studies involving volunteers for each state, where subjects were taken through experiences to elicit different levels of the desired

state. The subjects were wired up with many additional biometric measures (heart rate, respiration, blood pressure, blood volume flow, skin impedance and eye tracking), observed and recorded by a trained psychologist, and also self-reported. Emotiv Insight performance metrics have been validated in many independent peer-reviewed studies, and performance metrics algorithms are continuously improved and refined.

[0087] The first sensor 111 transmits the first digital EEG signal 250 to the first measurement device processor 116, and the second sensor 121 transmits the second digital EEG signal 260 to the second measurement device processor 126 (see discussion of Figure 1). The first measurement device processor 116 determines a first cognitive parameter value from the first digital EEG signal 250, and the second measurement device processor 126 determines a second cognitive parameter value from the second digital EEG signal 260 (see discussion of Figure 1).

[0088] The first measurement device processor 116 transmits the first cognitive parameter value to the first measurement device transceiver 113, and the second measurement device processor 126 transmits the second cognitive parameter value to the second measurement device transceiver 123 (see discussion of Figure 1). The first measurement device transceiver 113 transmits the first cognitive parameter value to the first display device transceiver 133 through the first network connection 180, and the second measurement device transceiver 123 transmits the second cognitive parameter value to the second display device transceiver 143 through the second network connection 190 (see discussion of Figure 1).

[0089] In an alternative embodiment, the first measurement device 110 is an Emotive Epoc X headset comprising fourteen EEG channels.

[0090] In an alternative embodiment, the second measurement device 120 is an Emotive Epoc X headset comprising fourteen EEG channels.

[0091] In an alternative embodiment, the first display device 130 is an electronic tablet or an all-in-one computer comprising a monitor and all desktop components.

[0092] In an alternative embodiment, the second display device 140 is an electronic tablet or an all-in-one computer comprising a monitor and all desktop components.

[0093] In an alternative embodiment, the first network connection 180 is a Wi-Fi connection, an infrared connection, or a wired connection.

[0094] In an alternative embodiment, the second network connection 190 is a Wi-Fi connection, an infrared connection, or a wired connection.

[0095] In an alternative embodiment, the first digital EEG signal 250 is visible on a digital graphical chart displayed on the first user interface 131 of the first display device 130.

[0096] In an alternative embodiment, the second digital EEG signal 260 is visible on a digital graphical chart displayed on the second user interface 141 of the second display device 140.

[0097] In an alternative embodiment, the first distinct wave is an Alpha wave. An Alpha wave has a frequency range of 7 Hz to 13 Hz and is associated with a relaxed and calm state of mind.

[0098] In an alternative embodiment, the second distinct wave is an Alpha wave.

[0099] In an alternative embodiment, the first distinct wave is a Theta wave. A Theta wave has a frequency range from 4 Hz to 7 Hz and is commonly found during periods of hyperventilation.

[00100] In an alternative embodiment, the second distinct wave is a Theta wave.

[00101] In an alternative embodiment, the first distinct wave is a Delta wave. A Delta wave has a frequency of up to 4 Hz and is predominantly found in older individuals during deep stages of sleep and in infants.

[00102] In an alternative embodiment, the second distinct wave is a Delta wave.

[00103] Figure 3 illustrates a flowchart 300 of a process for configuring a cognitive parameter-based cryptocurrency transfer through challenge settings.

[00104] At subprocess 302, the first user of the first measurement device 110 uses the first user interface 131 of the first display device 130 to select the challenge settings button 710 (see Figure 7).

[00105] At subprocess 304, the first user of the first measurement device 110 uses the first user interface 131 of the first display device 130 to select the opposing user button 810 (see Figure 8). User profile data 154 are transmitted from the central server memory 153 to the central server transceiver 152. The central server transceiver 152 transmits the user profile data 154 to the first display device transceiver 133 through the first server network connection 195. The first display device transceiver 133 transmits the user profile data 154 to the first display device processor 132 to compile the user profile data 154 to be displayed on the first user interface 131. The first user of the first measurement device 110 uses the first user interface 131 of the first display device 130 to

select the user profile sought to be challenged, which is the second user of the second measurement device 120.

[00106] At subprocess 306, the first user of the first measurement device 110 uses the first user interface 131 of the first display device 130 to select the challenge type button 820 (see Figure 8). The first user of the first measurement device 110 uses the first user interface 131 of the first display device 130 to select whether cryptocurrency will be transferred.

[00107] At subprocess 308, if cryptocurrency will be transferred, the first user of the first measurement device 110 uses the first user interface 131 of the first display device 130 at subprocess 310 to select a first amount of cryptocurrency to transfer. In one embodiment, the first amount of cryptocurrency to transfer is an amount of Bitcoin cryptocurrency. In one embodiment, the first amount of cryptocurrency to transfer is at least 1/10000 of a Bitcoin. If, at subprocess 308, there is no transfer of cryptocurrency selected, the next subprocess is subprocess 312.

[00108] After subprocess 308 or subprocess 310, next is subprocess 312 where the first user of the first measurement device 110 uses the first user interface 131 of the first display device 130 to select the time period button 830 (see Figure 8). The first user of the first measurement device 110 determines the length of time, known herein as the time period, that the challenge takes. In one embodiment, the length of time is from about 10 seconds to about 1,000 seconds.

[00109] At subprocess 314, the first user of the first measurement device 110 uses the first user interface 131 of the first display device 130 to select the private or public challenge button 840 (see Figure 8). The first user of the first measurement device 110

determines whether the challenge is viewed by only the first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140 or by other spectators stored as user profile data 154 in the central server memory 153. Also, at subprocess 314, if the challenge is viewed by other spectators, the first user of the first measurement device 110 uses the first user interface 131 of the first display device 130 to select an optional viewing charge, which in one embodiment is a minimum of $1 payable through a payment portal. In one embodiment, the optional viewing charge is evenly split among the first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140.

[00110] At subprocess 316, the first user of the first measurement device 110 uses the first user interface 131 of the first display device 130 to select the start time button 850 (see Figure 8). The first user of the first measurement device 110 determines the time when the challenge commences, either upon acceptance of the challenge by the second user of the second measurement device 120 using the second display device 140 or at a specified calendar date and time.

[00111] At subprocess 318, the first user of the first measurement device 110 uses the first user interface 131 of the first display device 130 to select the send challenge button 860 (see Figure 8). The data entered at subprocess 304, subprocess 306, subprocess 308, subprocess 310 (if any), subprocess 312, subprocess 314, and subprocess 316 are transmitted as challenge data 156 from the first display device processor 132 to

the first display device transceiver 133 and then to the central server transceiver 152 through the first server network connection 195.

[00112] At subprocess 320, the central server transceiver 152 transmits the challenge data 156 to the central server memory 153 for storage.

[00113] At subprocess 322, the central server transceiver 152 transmits the challenge data 156 to the second display device transceiver 143 through the second server network connection 197. The second display device transceiver 143 transmits the challenge data to the second display device processor 142. The second display device processor 142 transmits the challenge data 156 to the second user interface 141 to be displayed to the second user of the second measurement device 120 using the second display device 140.

[00114] At subprocess 324, the second user of the second measurement device 120 using the second display device 140 chooses whether to accept or decline the challenge using the second interface 141 of the second display device 140 based upon selected criteria, which is the challenge data 156 entered at subprocess 304, subprocess 306, subprocess 308, subprocess 310 (if any), subprocess 312, subprocess 314, and subprocess 316. If the second user of the second measurement device 120 declines the challenge, the next subprocess is subprocess 326 where no challenge commences and thus no cognitive parameter-based cryptocurrency transfer occurs. If the second user of the second measurement device 120 accepts the challenge, the next subprocess is subprocess 328. In one embodiment, the second user of the second measurement device 120 has the option to amend the challenge data 156 entered at subprocess 304, subprocess 306, subprocess

308, subprocess 310 (if any) (second amount of cryptocurrency to transfer), subprocess 312, subprocess 314, and subprocess 316.

[00115] At subprocess 328, the first user of the first measurement device 110 connects the first display device 130 to the first measurement device 110 through a first network connection 180 (see discussion of Figure 1). The first user of the first measurement device 110 completes the connection process by pressing the measurement device button 950 using the first user interface 131 of the first display device 130 (see Figure 9). The second user of the second measurement device 120 pairs the second display device 140 to the second measurement device 120 through a second network connection 190 (see discussion of Figure 1). The second user of the second measurement device 120 completes the connection process by pressing the measurement device button 950 using the second user interface 141 of the second display device 140 (see Figure 9).

[00116] At subprocess 330, the challenge commences in accordance with the challenge data 156 entered at subprocess 304, subprocess 306, subprocess 308, subprocess 310 (if any), subprocess 312, subprocess 314, and subprocess 316. The first user of the first measurement device 110 uses the first user interface 131 of the first display device 130 to press the enter challenge button 730 (see Figure 7). The second user of the second measurement device 120 uses the second user interface 141 of the second display device 140 to press the enter challenge button 730 (see Figure 7). In one embodiment, if a first amount of cryptocurrency to transfer was selected at subprocess 310, the challenge concludes in a cognitive parameter-based cryptocurrency transfer (see Figure 4 and Figure 5).

[00117] In an alternative embodiment, the first amount of cryptocurrency to transfer is an amount of Ethereum cryptocurrency.

[00118] In an alternative embodiment, the first amount of cryptocurrency to transfer is an amount of Tether cryptocurrency.

[00119] In an alternative embodiment, the first amount of cryptocurrency to transfer is an amount of Binance Coin cryptocurrency.

[00120] In an alternative embodiment, the first amount of cryptocurrency to transfer is an amount of USD coin cryptocurrency.

[00121] In an alternative embodiment, the first amount of cryptocurrency to transfer is an amount of Cardano cryptocurrency.

[00122] In an alternative embodiment, the first amount of cryptocurrency to transfer is an amount of Solana cryptocurrency.

[00123] In an alternative embodiment, the first amount of cryptocurrency to transfer is an amount of XRP cryptocurrency.

[00124] In an alternative embodiment, the first amount of cryptocurrency to transfer is an amount of Terra cryptocurrency.

[00125] In an alternative embodiment, the first amount of cryptocurrency to transfer is an amount of Polkadot cryptocurrency.

[00126] In an alternative embodiment, the first amount of cryptocurrency to transfer is an amount of Dogecoin cryptocurrency.

[00127] In an alternative embodiment, the first amount of cryptocurrency to transfer is an amount of Avalanche cryptocurrency.

[00128] In an alternative embodiment, the second amount of cryptocurrency to transfer is an amount of Ethereum cryptocurrency.

[00129] In an alternative embodiment, the second amount of cryptocurrency to transfer is an amount of Tether cryptocurrency.

[00130] In an alternative embodiment, the second amount of cryptocurrency to transfer is an amount of Binance Coin cryptocurrency.

[00131] In an alternative embodiment, the second amount of cryptocurrency to transfer is an amount of USD coin cryptocurrency.

[00132] In an alternative embodiment, the second amount of cryptocurrency to transfer is an amount of Cardano cryptocurrency.

[00133] In an alternative embodiment, the second amount of cryptocurrency to transfer is an amount of Solana cryptocurrency.

[00134] In an alternative embodiment, the second amount of cryptocurrency to transfer is an amount of XRP cryptocurrency.

[00135] In an alternative embodiment, the second amount of cryptocurrency to transfer is an amount of Terra cryptocurrency.

[00136] In an alternative embodiment, the second amount of cryptocurrency to transfer is an amount of Polkadot cryptocurrency.

[00137] In an alternative embodiment, the second amount of cryptocurrency to transfer is an amount of Dogecoin cryptocurrency.

[00138] In an alternative embodiment, the second amount of cryptocurrency to transfer is an amount of Avalanche cryptocurrency.

[00139] In an alternative embodiment, the length of time, known herein as the time period, that the challenge takes is from about 1 second to about 10 seconds.

[00140] In an alternative embodiment, the length of time, known herein as the time period, that the challenge takes is from about 1000 seconds to about 10,000 seconds.

[00141] In an alternative embodiment, the second user of the second measurement device 120 does not have the option to amend the challenge data 156 entered at subprocess 304, subprocess 306, subprocess 308, subprocess 310 (if any), subprocess 312, subprocess 314, and subprocess 316.

[00142] In an alternative embodiment, subprocess 328 occurs before subprocess 302, subprocess 304, subprocess 306, subprocess 308, subprocess 310, subprocess 312, subprocess 314, subprocess 316, subprocess 318, subprocess 320, subprocess 322, subprocess 324, or subprocess 326.

[00143] In an alternative embodiment, the optional viewing charge is split among the first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140 based on a percentage between 1% and 99%.

[00144] Figure 4 illustrates a flowchart 400 of a process for determining a first cognitive parameter value and a second cognitive parameter value, determining the

highest total cognitive parameter score, and transmitting a notification signal to transfer cryptocurrency.

[00145] At subprocess 402, a challenge between the first user of the first measurement device 110 and the second user of the second measurement device 120 commences in accordance with the challenge data 156 entered at subprocess 304, subprocess 306, subprocess 308, subprocess 310 (if any), subprocess 312, subprocess 314, and subprocess 316 (see discussion of Figure 3). The first user of the first measurement device 110 uses the first user interface 131 of the first display device 130 to press the enter challenge button 730 (see Figure 7). The second user of the second measurement device 120 uses the second user interface 141 of the second display device 140 to press the enter challenge button 730 (see Figure 7).

[00146] At subprocess 405, the first display device processor 132 initiates a first start signal when the first user of the first measurement device 110 presses the enter challenge button 730 using the first user interface 131 (see Figure 7). The first display device processor 132 transmits the first start signal to the first display device transceiver 133. The first display device transceiver 133 transmits the first start signal to the first measurement device transceiver 113 through the first network connection 180. The second display device processor 142 initiates a second start signal when the second user of the second measurement device 120 presses the enter challenge button 730 using the second user interface 141 (see Figure 7). The second display device processor 142 transmits the second start signal to the second display device transceiver 143. The second display device transceiver 143 transmits the second start signal to the second measurement device transceiver 123 through the second network connection 190. If no

cryptocurrency to transfer was selected at subprocess 308 (see discussion of Figure 3), the first display device transceiver 133 transmits the first start signal to the central server transceiver 152 through the first server network connection 195 and the second display device transceiver 143 transmits the second start signal to the central server transceiver 152 through the second server network connection 197. The central server transceiver 152 transmits the first start signal and the second start signal to the central server processor 151. When the central server processor 151 receives both the first start signal and the second start signal, the central server processor 151 activates the central server internal clock 159, which measures the time period as specified in subprocess 312 of Figure 3, and the recording of a first cognitive parameter value and a second cognitive parameter value begins (see subprocess 408). If an amount of cryptocurrency to transfer was selected at subprocess 308 (see Figure 3), see discussion of Figure 5.

[00147] At subprocess 408, the first measurement device transceiver 113 receives the first start signal from the first display device transceiver 133. The first measurement device transceiver 113 transmits the first start signal to the first measurement device processor 116, which transmits the first start signal to the first sensor 111. The first sensor 111 is physically coupled to the head of the first user of the first measurement device 110 and detects first brainwave signals of the first user of the first measurement device 110 using electroencephalogram (EEG) channels. In one embodiment, the first sensor 111 is an EEG semi-dry polymer sensor comprising five EEG channels named AF3, AF4, T7, T8, and Pz. The second measurement device transceiver 123 receives the second start signal from the second display device transceiver 143. The second measurement device transceiver 123 transmits the second start signal to the second

measurement device processor 126, which transmits the second start signal to the second sensor 121. The second sensor 121 is physically coupled to the head of the second user of the second measurement device 120 and detects second brainwave signals of the second user of the second measurement device 120 using EEG channels. In one embodiment, the second sensor 121 is an EEG semi-dry polymer sensor comprising five EEG channels named AF3, AF4, T7, T8, and Pz.

[00148] At subprocess 410, the first sensor 111 determines a first analog EEG signal from the detected first brainwave signal of the first user of the first measurement device 110. The second sensor 121 determines a second analog EEG signal from the detected second brainwave signal of the second user of the second measurement device 120.

[00149] At subprocess 412, the first analog-to-digital converter (ADC) 112 of the first sensor 111 converts the first analog EEG signal to a first digital EEG signal 250 by passing the first analog EEG signal through a filter at a specified sampling rate. In one embodiment, the filter is a 5th order Sinc filter and the specified sampling rate is a sequential sampling rate of 128 samples per second. The second analog-to-digital converter (ADC) 122 of the second sensor 121 converts the second analog EEG signal to a second digital EEG signal 260 by passing the second analog EEG signal through a filter at a specified sampling rate. In one embodiment, the filter is a 5th order Sinc filter and the specified sampling rate is a sequential sampling rate of 128 samples per second.

[00150] At subprocess 414, the first sensor 111 transmits the first digital EEG signal 250 to the first measurement device processor 116. The first measurement device processor 116 determines a first cognitive parameter value for the first user of the first

measurement device 110. In one embodiment, the first cognitive parameter value is a numerical integer from 1 to 100 for the cognitive parameter of focus. The second sensor 121 transmits the second digital EEG signal 260 to the second measurement device processor 126. The second measurement device processor 126 determines a second cognitive parameter value for the second user of the second measurement device 120. In one embodiment, the second cognitive parameter value is a numerical integer from 1 to 100 for the cognitive parameter of focus.

[00151] At subprocess 416, the first measurement device processor 116 transmits the first cognitive parameter value to the first measurement device transceiver 113. The first measurement device transceiver 113 transmits the first cognitive parameter value and the first measurement device identifier 114 to the first display device transceiver 133 through the first network connection 180. The first display device transceiver 133 receives the first cognitive parameter value and the first measurement device identifier 114. The second measurement device processor 126 transmits the second cognitive parameter value to the second measurement device transceiver 123. The second measurement device transceiver 123 transmits the second cognitive parameter value and the second measurement device identifier 124 to the second display device transceiver 143 through the second network connection 190. The second display device transceiver 143 receives the second cognitive parameter value and the second measurement device identifier 124.

[00152] At subprocess 418, the first display device transceiver 133 transmits the first cognitive parameter value and the first measurement device identifier 114 to the central server transceiver 152 through the first server network connection 195. The

second display device transceiver 143 transmits the second cognitive parameter value and the second measurement device identifier 124 to the central server transceiver 152 through the second server network connection 197. The central server transceiver 152 receives the first cognitive parameter value, the first measurement device identifier 114, the second cognitive parameter value, and the second measurement device identifier 124. The central server transceiver 152 transmits the first cognitive parameter value, the first measurement device identifier 114, the second cognitive parameter value, and the second measurement device identifier 124 to the central server processor 151.

[00153] At subprocess 420, the central server processor 151 sums the first cognitive parameter value with the first current total cognitive parameter score to determine an updated first current total cognitive parameter score paired with the first measurement device identifier 114 (see discussion of Figure 1). The central server processor 151 sums the second cognitive parameter value with the second current total cognitive parameter score to determine an updated second current total cognitive parameter score paired with the second measurement device identifier 124 (see discussion of Figure 1).

[00154] At subprocess 422, the updated first current total cognitive parameter score paired with the first measurement device identifier 114 and the updated second current total cognitive parameter score paired with the second measurement device identifier 124 are transmitted from the central server processor 151 to the central server transceiver 152. The central server transceiver 152 transmits the updated first current total cognitive parameter score paired with the first measurement device identifier 114 and the updated second current total cognitive parameter score paired with the second

measurement device identifier 124 to the first display device transceiver 133 through the first server network connection 195 and to the second display device transceiver 143 through the second server network connection 197. The first display device transceiver 133 receives the updated first current total cognitive parameter score paired with the first measurement device identifier 114 and the updated second current total cognitive parameter score paired with the second measurement device identifier 124. The first display device transceiver 133 transmits the updated first current total cognitive parameter score paired with the first measurement device identifier 114 and the updated second current total cognitive parameter score paired with the second measurement device identifier 124 to the first display device processor 132. The first display device processor 132 transmits the updated first current total cognitive parameter score and the updated second current total cognitive parameter score for display on the first user interface 131 (see Figure 6). The second display device transceiver 143 receives the updated first current total cognitive parameter score paired with the first measurement device identifier 114 and the updated second current total cognitive parameter score paired with the second measurement device identifier 124. The second display device transceiver 143 transmits the updated first current total cognitive parameter score paired with the first measurement device identifier 114 and the updated second current total cognitive parameter score paired with the second measurement device identifier 124 to the second display device processor 142. The second display device processor 142 transmits the updated first current total cognitive parameter score and the updated second current total cognitive parameter score for display on the second user interface 141 (see Figure 6). If at subprocess 314 of Figure 3 other user profiles (spectators) were selected

to view the challenge, the central server transceiver 152 transmits the updated first current total cognitive parameter score and the updated second current total cognitive parameter score to the spectators' display devices through network connections.

[00155] At subprocess 424, the central server processor 151 determines the highest total cognitive parameter score out of the updated first current total cognitive parameter score and the updated second current total cognitive parameter score after a time period as measured by the central server internal clock 159 (see Figure 1).

[00156] At subprocess 426, the central server processor 151 transmits a notification signal that comprises instructions that instruct the cryptocurrency exchange server (CES) 170 to take one or more actions. The notification signal instructs the cryptocurrency exchange server (CES) processor 171 to transfer the first amount of cryptocurrency and the second amount of cryptocurrency to the wallet of the winner (see Figure 1). The central server processor 151 transmits the notification signal to the central server transceiver 152. The central server transceiver 152 transmits the notification signal to the cryptocurrency exchange server (CES) transceiver 175 through the cryptocurrency network connection 199. The cryptocurrency exchange server (CES) transceiver 175 transmits the notification signal to the cryptocurrency exchange server (CES) processor 171.

[00157] Figure 5 illustrates a flowchart 500 of a process for conducting a cognitive parameter-based cryptocurrency transfer, which comprises transferring cryptocurrency upon determining the highest total cognitive parameter score at the conclusion of a challenge.

[00158] At subprocess 501, the first user of the first measurement device 110 uses the first user interface 131 of the first display device 130 to select a first amount of cryptocurrency to transfer. Subprocess 501 occurs at subprocess 310 in Figure 3 (see discussion of Figure 3).

[00159] At subprocess 502, the second user of the second measurement device 120 uses the second user interface 141 of the second display device 140 to select a second amount of cryptocurrency to transfer. Subprocess 502 occurs at subprocess 324 in Figure 3 (see discussion of Figure 3). In one embodiment, the first amount of cryptocurrency to transfer selected in subprocess 501 equals the second amount of cryptocurrency to transfer selected in subprocess 502.

[00160] At subprocess 503, the first display device processor 132 transmits a first amount of cryptocurrency signal specifying the first amount of cryptocurrency to the first display device transceiver 133. The first display device transceiver 133 transmits the first amount of cryptocurrency signal to the central server transceiver 152 through the first server network connection 195. The central server transceiver 152 transmits the first amount of cryptocurrency signal to the cryptocurrency exchange server (CES) transceiver 175 through the cryptocurrency network connection 199. The cryptocurrency exchange server (CES) transceiver 175 transmits the first amount of cryptocurrency signal to the cryptocurrency exchange server (CES) processor 171. The cryptocurrency exchange server (CES) processor 171 transmits the first amount of cryptocurrency signal to the first display device user wallet 172.

[00161] At subprocess 504, the second display device processor 142 transmits a second amount of cryptocurrency signal specifying the second amount of cryptocurrency

to the second display device transceiver 143. The second display device transceiver 143 transmits the second amount of cryptocurrency signal to the central server transceiver 152 through the second server network connection 197. The central server transceiver 152 transmits the second amount of cryptocurrency signal to the cryptocurrency exchange server (CES) transceiver 175 through the cryptocurrency network connection 199. The cryptocurrency exchange server (CES) transceiver 175 transmits the second amount of cryptocurrency signal to the cryptocurrency exchange server (CES) processor 171. The cryptocurrency exchange server (CES) processor 171 transmits the second amount of cryptocurrency signal to the second display device user wallet 173.

[00162] At subprocess 506, the private key of the first display device user wallet 172, which is associated with the first user of the first measurement device 110 using the first display device 130, is used to encrypt the first amount of cryptocurrency.

[00163] At subprocess 508, the private key of the second display device user wallet 173, which is associated with the second user of the second measurement device 120 using the second display device 140, is used to encrypt the second amount of cryptocurrency.

[00164] At subprocess 510, the cryptocurrency exchange server (CES) processor 171 transfers the encrypted first amount of cryptocurrency from the first display device user wallet 172 to the public address of the central wallet 174.

[00165] At subprocess 512, the cryptocurrency exchange server (CES) processor 171 transfers the encrypted second amount of cryptocurrency from the second display device user wallet 173 to the public address of the central wallet 174.

[00166] At subprocess 514, the central wallet 174 receives and stores the encrypted first amount of cryptocurrency and the encrypted second amount of cryptocurrency.

[00167] At subprocess 516, the cryptocurrency exchange server (CES) processor 171 transmits a start signal to the cryptocurrency exchange server (CES) transceiver 175. The cryptocurrency exchange server (CES) transceiver 175 transmits the start signal to the central server transceiver 152 through the cryptocurrency network connection 199.

[00168] At subprocess 518, the central server transceiver 152 receives the start signal. The central server transceiver 152 transmits the start signal to the first display device transceiver 133 through the first server network connection 195. The first display device transceiver 133 transmits the start signal to the first display device processor 132. When the first display device processor 132 receives the start signal, the first display device processor 132 enables the enter challenge button 730 so that the first user of the first measurement device 110 can press the enter challenge button 730 using the first user interface 131 (see discussion of Figure 7). The central server transceiver 152 transmits the start signal to the second display device transceiver 143 through the second server network connection 197. The second display device transceiver 143 transmits the start signal to the second display device processor 142. When the second display device processor 142 receives the start signal, the second display device processor 142 enables the enter challenge button 730 so that the second user of the second measurement device 120 can press the enter challenge button 730 using the second user interface 141 (see discussion of Figure 7).

[00169] At subprocess 520, the challenge commences. Subprocess 520 is the same subprocess as subprocess 330 in Figure 3 and subprocess 402 in Figure 4.

[00170] At subprocess 522, the challenge is conducted and concludes in accordance with the flowchart 400 in Figure 4 (see discussion of Figure 4).

[00171] At subprocess 524, the central server processor 151 transmits a notification signal to the central server transceiver 152. The central server transceiver 152 transmits the notification signal to the cryptocurrency exchange server (CES) transceiver 175 through the cryptocurrency network connection 199. Subprocess 524 is the same as subprocess 426 in Figure 4 (see discussion of Figure 4).

[00172] At subprocess 526, the cryptocurrency exchange server (CES) transceiver 175 transmits the notification signal to the cryptocurrency exchange server (CES) processor 171.

[00173] At subprocess 528, the cryptocurrency exchange server (CES) processor 171 receives the notification signal. The cryptocurrency exchange server (CES) processor 171 receives the first amount of cryptocurrency and second amount of cryptocurrency from the central wallet 174. The cryptocurrency exchange server (CES) processor 171 encrypts the first amount of cryptocurrency and the second amount of cryptocurrency using the private key of the central wallet 174.

[00174] At subprocess 530, the cryptocurrency exchange server (CES) processor 171 transfers the encrypted first amount of cryptocurrency and the encrypted second amount of cryptocurrency to the public address of the winner having the higest total cognitive parameter score, which is the public address of the first display device user wallet 172, which is associated with the first user of the first measurement device 110 using the first display device 130, or the public address of the second display device user wallet 173, which is associated with the second user of the second measurement device

120 using the second display device 140. If the first amount of cryptocurrency and second amount of cryptocurrency are sent to the public address of the first display device user wallet 172, the first amount of cryptocurrency and second amount of cryptocurrency are stored in the first display device user wallet 172. If the first amount of cryptocurrency and second amount of cryptocurrency are sent to the public address of the second display device user wallet 173, the first amount of cryptocurrency and second amount of cryptocurrency are stored in the second display device user wallet 173.

[00175] In an alternative embodiment, the first amount of cryptocurrency selected in subprocess 501 does not equal the second amount of cryptocurrency selected in subprocess 502.

[00176] In an alternative embodiment, the cryptocurrency exchange server (CES) processor 171 does not transfer the encrypted first amount of cryptocurrency and the encrypted second amount of cryptocurrency to the public address of the first display device user wallet 172, which is associated with the first user of the first measurement device 110 using the first display device 130, or the second display device user wallet 173, which is associated with the second user of the second measurement device 120 using the second display device 140. Instead, the central wallet 174 retains the encrypted first amount of cryptocurrency and the encrypted second amount of cryptocurrency. However, the available cryptocurrency balance for the first user of the first measurement device 110 using the first display device 130 is updated to include the first amount of cryptocurrency and the second amount of cryptocurrency if the first user of the first measurement device 110 using the first display device 130 is the winner. Or, the available cryptocurrency balance for the second user of the second measurement device 120 using

the second display device 140 is updated to include the first amount of cryptocurrency and the second amount of cryptocurrency if the second user of the second measurement device 120 using the second display device 140 is the winner (see discussion of Figure 9 including the available cryptocurrency balance button 940).

[00177] Figure 6 illustrates a challenge status display 600. In one embodiment, the challenge status display 600 is displayed in the first user interface 131 of the first display device 130 and the second user interface 141 of the second display device 140.

[00178] The challenge status display 600 includes an updated first current total cognitive parameter score image 605, an updated second current total cognitive parameter score image 610, a first user of the first measurement device image 615, a second user of the second measurement device image 620, a bar graph image 625, and a spectator N image 640. The bar graph image 625 comprises an updated first current total cognitive parameter score percentage image 630 and an updated second current total cognitive parameter score percentage image 635.

[00179] In operation, the first user interface 131 of the first display device 130 and the second user interface 141 of the second display device 140 both display the challenge status display 600 when the challenge commences (see subprocess 520 of Figure 5, subprocess 402 of Figure 4, and subprocess 330 of Figure 3).

[00180] The first user interface 131 receives the updated first current total cognitive parameter score and the updated second current total cognitive parameter score from the first display device processor 132 (see discussion of Figure 4). In one embodiment, the first user interface 131 displays the updated first current total cognitive parameter score as the updated first current total cognitive parameter score image 605. In

one embodiment, the first user interface 131 displays the updated second current total cognitive parameter score as the updated second current total cognitive parameter score image 610.

[00181] The second user interface 141 receives the updated first current total cognitive parameter score and the updated second current total cognitive parameter score from the second display device processor 142 (see discussion of Figure 4). In one embodiment, the second user interface 141 displays the updated first current total cognitive parameter score as the updated first current total cognitive parameter score image 605. In one embodiment, the second user interface 141 displays the updated second current total cognitive parameter score as the updated second current total cognitive parameter score image 610.

[00182] In one embodiment, the first display device processor 132 and the second display device processor 142 both use the updated first current total cognitive parameter score and the updated second current total cognitive parameter score to produce a bar graph illustrating the percentage difference between the updated first current total cognitive parameter score and the updated second current total cognitive parameter score. The updated first current total cognitive parameter score percentage is calculated by dividing the updated first current total cognitive parameter score by the sum of the updated first current total cognitive parameter score and the updated second current total cognitive parameter score and multiplying the result by one hundred to produce a value of X %. The updated second current total cognitive parameter score percentage is calculated by dividing the updated second current total cognitive parameter score by the sum of the updated first current total cognitive parameter score and the updated second

current total cognitive parameter score and multiplying the result by one hundred to produce a value of 100 – X %. The first user interface 131 and the second user interface 141 display the updated first current total cognitive parameter score percentage as the updated first current total cognitive parameter score percentage image 630 as part of the bar graph image 625. The first user interface 131 and the second user interface 141 display the updated second current total cognitive parameter score percentage as the updated second current total cognitive parameter score percentage image 635 as part of the bar graph image 625.

[00183] The first display device processor 132 and the second display device processor 142 both receive a first user of the first measurement device image 615 and a second user of the second measurement device image 620 from the central server 150, which are stored as user profile data 154 in the central server memory 153 (see discussion of Figure 1). The first user interface 131 receives the first user of the first measurement device image 615 and the second user of the second measurement device image 620 from the first display device processor 132 and displays the first user of the first measurement device image 615 and the second user of the second measurement device image 620. The second user interface 141 receives the first user of the first measurement device image 615 and the second user of the second measurement device image 620 from the second display device processor 142 and displays the first user of the first measurement device image 615 and the second user of the second measurement device image 620.

[00184] The first display device processor 132 and the second display device processor 142 both receive at least one spectator N image 640 if a public challenge was selected at subprocess 314 of Figure 3 from the central server 150. The at least one

spectator N image 640 is stored as user profile data 154 in the central server memory 153 (see discussion of Figure 1).

[00185] In an alternative embodiment, the first user interface 131 does not display the updated first current total cognitive parameter score as the updated first current total cognitive parameter score image 605 but rather announces the updated first current total cognitive parameter score orally using speakers through an auditory signal.

[00186] In an alternative embodiment, the first user interface 131 displays the updated first current total cognitive parameter score as the updated first current total cognitive parameter score image 605 and announces the updated first current total cognitive parameter score orally using speakers through an auditory signal.

[00187] In an alternative embodiment, the first user interface 131 does not display the updated second current total cognitive parameter score as the updated second current total cognitive parameter score image 610 but rather announces the updated second current total cognitive parameter score orally using speakers through an auditory signal.

[00188] In an alternative embodiment, the first user interface 131 displays the updated second current total cognitive parameter score as the updated second current total cognitive parameter score image 610 and announces the updated second current total cognitive parameter score orally using speakers through an auditory signal.

[00189] In an alternative embodiment, the second user interface 141 does not display the updated first current total cognitive parameter score as the updated first current total cognitive parameter score image 605 but rather announces the updated first current total cognitive parameter score orally using speakers through an auditory signal.

[00190] In an alternative embodiment, the second user interface 141 displays the updated first current total cognitive parameter score as the updated first current total cognitive parameter score image 605 and announces the updated first current total cognitive parameter score orally using speakers through an auditory signal.

[00191] In an alternative embodiment, the second user interface 141 does not display the updated second current total cognitive parameter score as the updated second current total cognitive parameter score image 610 but rather announces the updated second current total cognitive parameter score orally using speakers through an auditory signal.

[00192] In an alternative embodiment, the second user interface 141 displays the updated second current total cognitive parameter score as the updated second current total cognitive parameter score image 610 and announces the updated second current total cognitive parameter score orally using speakers through an auditory signal.

[00193] In an alternative embodiment, the first display device processor 132 and the second display device processor 142 both use the updated first current total cognitive parameter score and the updated second current total cognitive parameter score to produce a pie chart image illustrating the percentage difference between the updated first current total cognitive parameter score and the updated second current total cognitive parameter score.

[00194] In an alternative embodiment, the challenge status display 600 is a virtual reality display.

[00195] Figure 7 illustrates a home screen 700. The home screen 700 is displayed in the first user interface 131 of the first display device 130 and the second user interface 141 of the second display device 140.

[00196] The home screen 700 is an interactive display and includes a challenge settings button 710, an open challenges button 720, an enter challenge button 730, a user profile button 740, a messages button 750, and an announcements button 760.

[00197] In operation, the first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140 select the challenge settings button 710. Selecting the challenge settings button 710 yields the challenge settings screen 800 (see discussion of Figure 8), an interactive display.

[00198] The first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140 select the open challenges button 720. Selecting the open challenges button 720 yields an interactive display comprising a list of any open challenges available to accept as created by opposing users (see subprocess 324 of Figure 3).

[00199] The first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140 select the enter challenge button 730. Selecting the enter challenge button 730 yields an interactive display comprising a list of opposing users to challenge and selecting a user from the list of users to challenge yields the challenge status display 600 (see discussion of Figure 6).

[00200] The first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140 select the user profile button 740. Selecting the user profile button 740 yields the user profile screen 900 (see discussion of Figure 9), an interactive display.

[00201] The first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140 select the messages button 750. Selecting the messages button 750 yields an interactive display where messages can be sent to and received from other user profiles stored as user profile data 154. In one embodiment, the first user of the first measurement device 110 using the first display device 130 types a first message and designates a recipient user. The first message is transmitted as first message data from the first display device processor 132 to the first display device transceiver 133. The first display device transceiver 133 transmits the first message data paired with the first measurement device identifier 114 to the central server transceiver 152 through the first server network connection 195. The central server transceiver 152 transmits the first message data paired with the first measurement device identifier 114 to be stored as messages data 161 in the central server memory 153 (see Figure 1). The central server transceiver 152 further transmits the first message data paired with the first measurement device identifier 114 to the recipient user through a network connection. In one embodiment, the recipient user is the second user of the second measurement device 120 using the second display device 140. The first message data paired with the first measurement device identifier 114 is transmitted from the central server transceiver 152 to the second display device transceiver 143 through the second server network

connection 197. The first message data paired with the first measurement device identifier 114 is transmitted from the second display device transceiver 143 to the second display device processor 142 and then to the second user interface 141 for viewing by the second user of the second measurement device 120 using the second display device 140. In one embodiment, the second user of the second measurement device 120 using the second display device 140 types a second message and designates a recipient user. The second message is transmitted as second message data from the second display device processor 142 to the second display device transceiver 143. The second display device transceiver 143 transmits the second message data paired with the second measurement device identifier 124 to the central server transceiver 152 through the second server network connection 197. The central server transceiver 152 transmits the second message data paired with the second measurement device identifier 124 to be stored as messages data 161 in the central server memory 153. The central server transceiver 152 further transmits the second message data paired with the second measurement device identifier 124 to the recipient user through a network connection. In one embodiment, the recipient user is the first user of the first measurement device 110 using the first display device 130. The second message data paired with the second measurement device identifier 124 is transmitted from the central server transceiver 152 to the first display device transceiver 133 through the first server network connection 195. The second message data paired with the second measurement device identifier 124 is transmitted from the first display device transceiver 133 to the first display device processor 132 and then to the first user interface 131 for viewing by the first user of the first measurement device 110 using the first display device 130.

[00202] The first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140 select the announcements button 760. Announcements data 160 are stored in the central server memory 153 (see Figure 1). In one embodiment, announcements data 160 are transmitted to the first user of the first measurement device 110 using the first display device 130 from the central server transceiver 152 to the first display device transceiver 133 through the first server network connection 195. The announcements data 160 are transmitted from the first display device transceiver 133 to the first display device processor 132 and then to the first user interface 131 for viewing by the first user of the first measurement device 110 using the first display device 130. In one embodiment, announcements data 160 are transmitted to the second user of the second measurement device 120 using the second display device 140 from the central server transceiver 152 to the second display device transceiver 143 through the second server network connection 197. The announcements data 160 are transmitted from the second display device transceiver 143 to the second display device processor 142 and then to the second user interface 141 for viewing by the second user of the second measurement device 120 using the second display device 140.

[00203] Figure 8 illustrates a challenge settings screen 800. The challenge settings screen 800 is displayed in the first user interface 131 of the first display device 130 and the second user interface 141 of the second display device 140.

[00204] The challenge settings screen 800 is an interactive display and includes an opposing user button 810, a challenge type button 820, a time period button 830, a private

or public challenge button 840, a start time button 850, a send challenge button 860, and a revoke challenge button 870.

[00205] In operation, the first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140 access the challenge settings screen 800 by selecting the challenge settings button 710 (see Figure 7).

[00206] The first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140 select the opposing user button 810. Selecting the opposing user button 810 yields an interactive search tool to search for opposing users to challenge. The first user of the first measurement device 110 using the first display device 130 selects an opposing user, which in one embodiment is the second user of the second measurement device 120 using the second display device 140, to challenge by selecting the opposing user button 810 in subprocess 304 of Figure 3.

[00207] The first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140 select the challenge type button 820. Selecting the challenge type button 820 yields an interactive display with an option to select a challenge with a transfer of cryptocurrency concluding with a cognitive parameter-based cryptocurrency transfer or a challenge without a transfer of cryptocurrency. The first user of the first measurement device 110 selects a challenge with a transfer of cryptocurrency or a challenge without a transfer of cryptocurrency by pressing the challenge type button 820 in subprocess 306 of Figure 3. If the first user of the first measurement device 110 selects

a challenge with a transfer of cryptocurrency, the first user of the first measurement device 110 selects a first amount of cryptocurrency at subprocess 310 of Figure 3.

[00208] The first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140 select the time period button 830. Selecting the time period button 830 yields an interactive display with an option to select the length of time, known herein as the time period, of the challenge. The first user of the first measurement device 110 selects the time period of the challenge by selecting the time period button 830 in subprocess 312 of Figure 3. In one embodiment, the length of time is from about 10 seconds to about 1,000 seconds.

[00209] The first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140 select the private or public challenge button 840. Selecting the private or public challenge button 840 yields an interactive display with an option to select a private challenge or a public challenge. Selecting a private challenge yields a setting where only the first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140 view the challenge status display 600 when the challenge commences and during the duration of the challenge. Selecting a public challenge yields a setting where the first user of the first measurement device 110, the second user of the second measurement device 120, and at least one spectator N view the challenge status display 600 when the challenge commences and during the duration of the challenge. The first

user of the first measurement device 110 selects a private challenge or a public challenge by first selecting the private or public challenge button 840 in subprocess 314 of Figure 3.

[00210] The first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140 select the start time button 850. Selecting the start time button 850 yields an interactive display with an option to select the start time of the challenge, either upon acceptance of the challenge or at a specified calendar date and time. The first user of the first measurement device 110 determines the time when the challenge starts, either upon acceptance of the challenge or at a specified calendar date and time, at subprocess 316 of Figure 3. Selecting the start time as upon acceptance results in the challenge starting when the second user of the second measurement device 120 accepts the challenge at subprocess 324 of Figure 3. Selecting the start time as a specified calendar date and time permits the first user of the first measurement device 110 to select a calendar date and a time for the challenge to start provided that the second user of the second measurement device 120 accepts the challenge at subprocess 324 of Figure 3.

[00211] The first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140 select the send challenge button 860. Selecting the send challenge button 860 results in a transmission of the challenge containing the settings entered using the opposing user button 810, the challenge type button 820, the time period button 830, the private or public challenge button 840, and the start time button 850. The first user of the first measurement device 110 selects the send challenge button 860 at subprocess 318 of Figure 3. As a result of selecting the send challenge button 860 at subprocess 318 of

Figure 3, the settings entered using the opposing user button 810, the challenge type button 820, the time period button 830, the private or public challenge button 840, and the start time button 850 are transmitted as challenge data 156 from the first display device 130 to the central server transceiver 152 at subprocess 320 of Figure 3.

[00212] The first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140 select the revoke challenge button 870. Selecting the revoke challenge button 870 results in a revoke signal being sent to the central server 150 where the settings entered using the opposing user button 810, the challenge type button 820, the time period button 830, the private or public challenge button 840, and the start time button 850 transmitted as challenge data 156 are deleted from the central server memory 153.

[00213] Figure 9 illustrates a user profile screen 900. The user profile screen 900 is displayed in the first user interface 131 of the first display device 130 and the second user interface 141 of the second display device 140.

[00214] The user profile screen 900 is an interactive display and includes a user identification button 910, a statistics button 920, a challenge history with no cryptocurrency transfer button 930, an available cryptocurrency balance button 940, and a measurement device button 950.

[00215] In operation, the first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140 access the user profile screen 900 by selecting the user profile button 740 (see discussion of Figure 7).

[00216] The first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140 select the user identification button 910. Selecting the user identification button 910 yields an interactive entry field to enter a unique user identification comprising at least one number, letter, or character. Entries using the user identification button 910 are stored as user profile data 154 (first user profile data and second user profile data – see discussion of Figure 1) in the central server memory 153. At subprocess 304 in Figure 3, the first user of the first measurement device 110 using the first display device 130 selects an opposing user to challenge, which in one embodiment is the second user of second measurement device 120 using the second display device 140, by the user identification that was entered by the second user of the second measurement device 120 using the second display device 140 by selecting the user identification button 910.

[00217] The first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140 select the statistics button 920. Selecting the statistics button 920 yields an interactive display where a user, for example the first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140, views his/her challenge statistics including historical first current total cognitive parameter scores, second current total cognitive parameter scores, first average cognitive parameter scores, second average cognitive parameter scores, and first amounts of cryptocurrency and second amounts of cryptocurrency selected at subprocess 310 and subprocess 324 of

Figure 3. Challenge statistics are stored as cognitive parameter score data 155 in the central server memory 153 and are transmitted to the first display device 130 through the first server network connection 195 for display in the first user interface 131 or to the second display device 140 through the second server network connection 197 for display in the second user interface 141.

[00218] The first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140 select the challenge history with no cryptocurrency transfer button 930. Selecting the challenge history with no cryptocurrency transfer button 930 yields an interactive display where a user, for example the first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140, views his/her challenge statistics where there was no transfer of cryptocurrency including historical first current total cognitive parameter scores, second current total cognitive parameter scores, first average cognitive parameter scores, and second average cognitive parameter scores from challenges where there was no transfer of cryptocurrency. Challenges where there is no transfer of cryptocurrency are selected at subprocess 306 of Figure 3. Challenge data where there was no transfer of cryptocurrency are stored as cognitive parameter score data 155 in the central server memory 153 and are transmitted to the first display device 130 through the first server network connection 195 for display in the first user interface 131 or to the second display device 140 through the second server network connection 197 for display in the second user interface 141.

[00219] The first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140 select the available cryptocurrency balance button 940. Selecting the available cryptocurrency balance button 940 yields an interactive display where a user, for example the first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140, views his/her available cryptocurrency balance to be applied to the first amount of cryptocurrency selected at subprocess 310 of Figure 3 and subprocess 501 of Figure 5 and the second amount of cryptocurrency confirmed or selected at subprocess 324 of Figure 3 and subprocess 502 of Figure 5. Cryptocurrency data 157 including cryptocurrency first user data affiliated with the first user of the first measurement device 110 using the first display device 130 and cryptocurrency second user data affiliated with the second user of the second measurement device 120 using the second display device 140, are also displayed when the available cryptocurrency balance button 940 is selected. The available cryptocurrency balance for the first user of the first measurement device 110 using the first display device 130 is in the first display device user wallet 172 of the cryptocurrency exchange server (CES) 170. The available cryptocurrency balance for the second user of the second measurement device 120 using the second display device 140 is in the second display device user wallet 173 of the cryptocurrency exchange server (CES) 170. The cryptocurrency exchange server (CES) 170 transmits a first available cryptocurrency balance signal from the cryptocurrency exchange server (CES) transceiver 175 to the central server transceiver 152 through the cryptocurrency network connection 199. The central server transceiver 152 transmits the first available

cryptocurrency balance signal to the first display device transceiver 133 through the first server network connection 195. The first display device transceiver 133 transmits the first available cryptocurrency balance signal to the first display device processor 132 which transmits to the first user interface 131, which displays an image illustrating the available cryptocurrency balance for the first user of the first measurement device 110 using the first display device 130 when the available cryptocurrency balance button 940 is selected. The cryptocurrency exchange server (CES) 170 transmits a second available cryptocurrency balance signal from the cryptocurrency exchange server (CES) transceiver 175 to the central server transceiver 152 through the cryptocurrency network connection 199. The central server transceiver 152 transmits the second available cryptocurrency balance signal to the second display device transceiver 143 through the second server network connection 197. The second display device transceiver 143 transmits the second available cryptocurrency balance signal to the second display device processor 142 which transmits to the second user interface 141, which displays an image illustrating the available cryptocurrency balance for the second user of the second measurement device 120 using the second display device 140 when the available cryptocurrency balance button 940 is selected. The first amount of cryptocurrency selected to transfer at subprocess 310 of Figure 3 and subprocess 501 of Figure 5 cannot exceed the available cryptocurrency balance for the first user of the first measurement device 110 using the first display device 130. The second amount of cryptocurrency confirmed or selected at subprocess 324 of Figure 3 and subprocess 502 of Figure 5 cannot exceed the available cryptocurrency balance for the second user of the second measurement device 120 using the second display device 140. Selecting the available

cryptocurrency balance button 940 also yields an interactive display where a user, the first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140, enters personal payment information that permits the purchase of funds to increase the available cryptocurrency balance for the first user of the first measurement device 110 using the first display device 130 and the available cryptocurrency balance for the second user of the second measurement device 120 using the second display device 140 through the cryptocurrency exchange server (CES) 170.

[00220] The first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140 select the measurement device button 950. Selecting the measurement device button 950 yields an interactive display where a user, for example the first user of the first measurement device 110 using the first display device 130 and the second user of the second measurement device 120 using the second display device 140, connects a first measurement device 110 and a second measurement device 120 and views the status of connected measurement devices. The first user of the first measurement device 110 pairs the first measurement device 110 to the first display device 130 by establishing a first network connection 180 (see Figure 1). The first measurement device identifier 114 that identifies the first measurement device 110 is transferred from the first measurement device memory 115 to the first measurement device processor 116 and then to the first measurement device transceiver 113. The first measurement device transceiver 113 transmits the first measurement device identifier 114 to the first display device transceiver 133 through the first network connection 180. The first display device

transceiver 133 transmits the first measurement device identifier 114 to the first display device processor 132 which maintains the first network connection 180. The first display device processor 132 transmits the first measurement device identifier 114 to the first display device memory 134 for storage so that the first display device 130 readily establishes a first network connection 180 with the first measurement device 110 for future uses of the first measurement device 110. The second user of the second measurement device 120 pairs the second measurement device 120 to the second display device 140 by establishing a second network connection 190. The second measurement device identifier 124 that identifies the second measurement device 120 is transferred from the second measurement device memory 125 to the second measurement device processor 126 and then to the second measurement device transceiver 123. The second measurement device transceiver 123 transmits the second measurement device identifier 124 to the second display device transceiver 143 through the second network connection 190. The second display device transceiver 143 transmits the second measurement device identifier 124 to the second display device processor 142 which maintains the second network connection 190. The second display device processor 142 transmits the second measurement device identifier 124 to the second display device memory 144 for storage so that the second display device 140 readily establishes a second network connection 190 with the second measurement device 120 for future uses of the second measurement device 120. Establishing the first network connection 180 between the first measurement device 110 and the first display device 130 occurs at subprocess 328 of Figure 3. Establishing the second network connection 190 between the second measurement device 120 and the second display device 140 occurs at subprocess 328 of Figure 3.

[00221] Figure 10 illustrates a flowchart 1000 of a process for determining first team cognitive parameter values and second team cognitive parameter values, determining the highest team total cognitive parameter score, and transmitting a notification signal to transfer cryptocurrency.

[00222] At subprocess 1005, a first team is formed. In one embodiment, the first team comprises 2 to 99 first team users. The first user of the first measurement device 110 using the first display device 130 selects the opposing user button 810 (see Figure 8). Selecting the opposing user button 810 yields an interactive search tool to search for opposing users to challenge. The first user of the first measurement device 110 using the first display device 130 selects an opposing user, which in one embodiment is the second user of the second measurement device 120 using the second display device 140, to challenge by selecting the opposing user button 810 in subprocess 304 of Figure 3. The first user of the first measurement device 110 using the first display device 130 further selects additional users (first team user 1, first team user 2, . . . first team user N) stored as user profile data 154 to comprise the first team that challenges the opposing user.

[00223] At subprocess 1010, a second team is formed. In one embodiment, the second team comprises 2 to 99 second team users. In one embodiment, the first user of the first measurement device 110 using the first display device 130 selects the opposing user button 810 (see Figure 8). Selecting the opposing user button 810 yields an interactive search tool to search for opposing users to challenge. The first user of the first measurement device 110 using the first display device 130 selects an opposing user, which in one embodiment is the second user of the second measurement device 120 using the second display device 140, to challenge by selecting the opposing user button 810 in

subprocess 304 of Figure 3. The first user of the first measurement device 110 using the first display device 130 further selects additional users (second team user 1, second team user 2, . . . second team user N) stored as user profile data 154 to comprise the second team.

[00224] At subprocess 1015, a first team amount of cryptocurrency to transfer is selected. The first team amount of cryptocurrency is the summation of the amounts of cryptocurrency contributed by each first team user. Amounts of cryptocurrency are selected as described above (see subprocess 501 and subprocess 502 of Figure 5 and subprocess 310 of Figure 3).

[00225] At subprocess 1020, a second team amount of cryptocurrency to transfer is selected. The second team amount of cryptocurrency is the summation of the amounts of cryptocurrency contributed by each second team user. Amounts of cryptocurrency are selected as described above (see subprocess 501 and subprocess 502 of Figure 5 and subprocess 310 of Figure 3).

[00226] At subprocess 1025, a set of first team brainwave signals are detected. A first measurement device 110 is physically coupled to the head of each first team user. Each first measurement device 110 includes a first sensor 111 that detects a first team brainwave signal from each first team user. Brainwave signals are detected as described above (see subprocess 408 of Figure 4 and discussion of Figure 1). In one embodiment, each first team brainwave signal is detected at an interval of about every 0.5 seconds over a time period of about 10 seconds to about 1,000 seconds (see subprocess 312 of Figure 3 and discussion of Figure 1).

[00227] At subprocess 1030, a set of second team brainwave signals are detected. A second measurement device 120 is physically coupled to the head of each second team user. Each second measurement device 120 includes a second sensor 121 that detects a second team brainwave signal from a second team user. Brainwave signals are detected as described above (see subprocess 408 of Figure 4 and discussion of Figure 1). In one embodiment, each second team brainwave signal is detected at an interval of about every 0.5 seconds over a time period of about 10 seconds to about 1,000 seconds (see subprocess 312 of Figure 3 and discussion of Figure 1).

[00228] At subprocess 1035, the first team brainwave signals are converted into first team digital EEG signals. EEG signals are determined as described above (see subprocess 410 and subprocess 412 of Figure 4 and discussion of Figure 1).

[00229] At subprocess 1040, the second team brainwave signals are converted into second team digital EEG signals. EEG signals are determined as described above (see subprocess 410 and subprocess 412 of Figure 4 and discussion of Figure 1).

[00230] At subprocess 1045, first team cognitive parameter values are determined from the first team digital EEG signals. Cognitive parameter values are determined as described above (see subprocess 414 of Figure 4 and discussion of Figure 1).

[00231] At subprocess 1050, second team cognitive parameter values are determined from the second team digital EEG signals. Cognitive parameter values are determined as described above (see subprocess 414 of Figure 4 and discussion of Figure 1).

[00232] At subprocess 1060, the highest team total cognitive parameter score is determined. The central server memory 153 stores user current cognitive parameter data 158, which includes a first current team total cognitive parameter score and a second current team total cognitive parameter score. In one embodiment, the first current team total cognitive parameter score is the summation of previously acquired first team cognitive parameter values. In one embodiment, the second current team total cognitive parameter score is the summation of previously acquired second team cognitive parameter values. The first current team total cognitive parameter score and the second current team total cognitive parameter score are transmitted to the central server processor 151. In one embodiment, the central server processor 151 sums the first team cognitive parameter values with the first current team total cognitive parameter score to determine an updated first current team total cognitive parameter score. The updated first current team total cognitive parameter score is the summation of at least two first team cognitive parameter values. The central server processor 151 sums the second team cognitive parameter values with the second current team total cognitive parameter score to determine an updated second team current total cognitive parameter score. The updated second current team total cognitive parameter score is the summation of at least two second team cognitive parameter values. The updated first current team total cognitive parameter score is transmitted from the central server processor 151 to the central server memory 153 to replace the prior first current team total cognitive parameter score. The updated second current team total cognitive parameter score is transmitted from the central server processor 151 to the central server memory 153 to replace the prior second current team total cognitive parameter score. In one embodiment, the central

server processor 151 determines a winner by determining the highest team total cognitive parameter score out of the updated first current team total cognitive parameter score and the updated second current team total cognitive parameter score after a time period as measured by the central server internal clock 159 (see discussion of Figure 1 and Figure 3).

[00233] At subprocess 1070, the first team amount of cryptocurrency and the second team amount of cryptocurrency are transferred to the winners, the first team comprising first team users or the second team comprising second team users. Transferring of cryptocurrency is completed as described above when the cryptocurrency exchange server (CES) 170 receives a notification signal (see discussion of Figure 5 and Figure 1). In one embodiment, the first team amount of cryptocurrency and the second team amount of cryptocurrency are equally divided among the winners.

[00234] In an alternative embodiment, the second user of the second measurement device 120 using the second display device 140 selects additional users (second team user 1, second team user 2, . . . second team user N) stored as user profile data 154 to comprise the second team at subprocess 324 of Figure 3.

[00235] In an alternative embodiment, the first current team total cognitive parameter score is the average of previously acquired first team cognitive parameter values.

[00236] In an alternative embodiment, the second current team total cognitive parameter score is the average of previously acquired second team cognitive parameter values.

[00237] In an alternative embodiment, the central server processor 151 averages the first team cognitive parameter values with the first current team total cognitive parameter score to determine an updated first current team total cognitive parameter score.

[00238] In an alternative embodiment, the central server processor 151 averages the second team cognitive parameter values with the second current team total cognitive parameter score to determine an updated second current team total cognitive parameter score.

[00239] In an alternative embodiment, the first team amount of cryptocurrency and the second team amount of cryptocurrency are divided among the winners in proportion to each winner's contribution of cryptocurrency as selected at subprocess 310 and subprocess 324 of Figure 3.

[00240] Existing systems cannot be used to conduct a cognitive parameter-based transfer of cryptocurrency. Users competing against each other use measurement devices to obtain the highest cognitive parameter values for mental focus. Additionally, a system does not exist where a central server determines the highest total cognitive parameter score and subsequently initiates a notification signal to transfer a first amount of cryptocurrency and a second amount of cryptocurrency to the user with the highest total cognitive parameter score. Competitors wirelessly connect a headset (measurement device) to a smartphone and compete with others around the world from the comfort of their homes. Competitors securely transfer cryptocurrency as part of the challenge involving a cognitive parameter-based transfer of cryptocurrency and receive cryptocurrency immediately upon being declared a winner with the highest total

cognitive parameter score. The method and system for conducting a cognitive parameter-based transfer of cryptocurrency combines the most market-attractive factors of both e-sports and nontraditional combat sports by providing not only an entirely new sport but also a sport that anyone can enjoy.

[00241] 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

What is claimed is:

1. A method comprising:

transferring a first amount of cryptocurrency from a first user and a second amount of cryptocurrency from a second user to the public address of a central wallet;

detecting a set of first brainwave signals from said first user using a first sensor;

detecting a set of second brainwave signals from said second user using a second sensor,

converting said set of first brainwave signals into a set of first electroencephalogram (EEG) signals and converting said set of second brainwave signals into a set of second EEG signals;

determining two first cognitive parameter values from said set of first EEG signals and determining two second cognitive parameter values from said set of second EEG signals;

determining an updated first current total cognitive parameter score by summing said two first cognitive parameter values;

determining an updated second current total cognitive parameter score by summing said two second cognitive parameter values;

determining the highest total cognitive parameter score out of said updated first current total cognitive parameter score and said updated second current total cognitive parameter score; and

transferring said first amount of cryptocurrency and said second amount of cryptocurrency in said central wallet to the public address of said first user upon determining said updated first current total cognitive parameter score to be said highest total cognitive parameter score or transferring said first amount of cryptocurrency and said second amount of cryptocurrency in said central wallet to the public address of said second user upon determining said updated second current total cognitive parameter score to be said highest total cognitive parameter score.

2. The method of claim 1, wherein said first sensor and said second sensor are EEG sensors.

3. The method of claim 1, wherein said first brainwave signals and said second brainwave signals are selected from the group consisting of alpha waves, beta waves, delta waves, theta waves, and combinations thereof.

4. The method of claim 1, wherein said two first cognitive parameter values and said two second cognitive parameter values are selected from the group consisting of focus, excitement, engagement, relaxation, interest, stress, and combinations thereof.

5. The method of claim 1, wherein said two first cognitive parameter values and said two second cognitive parameter values are integers.

6. The method of claim 1, wherein said first amount of cryptocurrency and said second amount of cryptocurrency are selected from the group consisting of Bitcoin, Ethereum, Tether, Binance Coin, USD Coin, Cardano, Solana, XRP, Terra, Polkadot, Dogecoin, Avalanche, and combinations thereof.

7. A system comprising:

a first measurement device, a second measurement device, a first display device, a second display device, and a central server, wherein:

said first measurement device comprises a first sensor, wherein said first sensor detects a set of first brainwave signals from a first user of said first measurement device, wherein said first measurement device determines a set of first electroencephalogram (EEG) signals from said set of first brainwave signals, wherein said first measurement device determines two first cognitive parameter values from said set of first EEG signals, wherein said first measurement device transmits said two first cognitive parameter values to said first display device,

said second measurement device comprises a second sensor, wherein said second sensor detects a set of second brainwave signals from a second user of said second measurement device, wherein said second measurement device determines a set of second electroencephalogram (EEG) signals from said set of second brainwave signals, wherein said second measurement device determines two second cognitive parameter values from said set of second EEG signals, wherein said second measurement device transmits said two second cognitive parameter values to said second display device,

said first display device receives said two first cognitive parameter values from said first measurement device, wherein said first display device transmits said two first cognitive parameter values to said central server,

said second display device receives said two second cognitive parameter values from said second measurement device, wherein said second display device transmits said two second cognitive parameter values to said central server,

said central server comprises a processor, wherein said central server receives said two first cognitive parameter values from said first display device and said two second cognitive parameter values from said second display device, wherein said processor determines an updated first current total cognitive parameter score by summing said two first cognitive parameter values, wherein said processor determines an updated second current total cognitive parameter score by summing said two second cognitive parameter values,

said processor determines the highest total cognitive parameter score out of said updated first current total cognitive parameter score and said updated second current total cognitive parameter score, and

said processor transmits a notification signal to transfer a first amount of cryptocurrency and a second amount of cryptocurrency in a central wallet to the public address of said first user upon determining said updated first current total cognitive parameter score to be said highest total cognitive parameter score or to transfer said first amount of cryptocurrency and said second amount of cryptocurrency to the public address of said second user upon determining said updated second current total cognitive parameter score to be said highest total cognitive parameter score.

8. The system of claim 7, wherein said system further comprises a cryptocurrency exchange server comprising a cryptocurrency exchange server processor, wherein

said cryptocurrency exchange server processor receives said notification signal from said central server, wherein said cryptocurrency exchange server processor executes said transfer of said first amount of cryptocurrency and said second amount of cryptocurrency.

9. The system of claim 7, wherein said first display device and said second display device are selected from a group consisting of a smartphone, an electronic tablet, an all-in-one computer, and a combination thereof.

10. The system of claim 7, wherein said first measurement device is communicatively coupled to said first display device through Bluetooth and said second measurement device is communicatively coupled to said second display device through Bluetooth.

11. The system of claim 7, wherein said first display device is communicatively coupled to said central server through a Wi-Fi connection, wherein said second display device is communicatively coupled to said central server through a Wi-Fi connection.

12. The system of claim 7, wherein said first display device is communicatively coupled to said central server through a cellular data connection, wherein said second display device is communicatively coupled to said central server through a cellular data connection.

13. A method comprising:

transferring a first team amount of cryptocurrency from a plurality of first team users and a second team amount of cryptocurrency from a plurality of second team users to the public address of a central wallet;

detecting a set of first team brainwave signals from a first team comprising a plurality of first team users using a plurality of first sensors;

detecting a set of second team brainwave signals from a second team comprising a plurality of second team users using a plurality of second sensors;

converting said set of first team brainwave signals into a set of first team electroencephalogram (EEG) signals and converting said set of second team brainwave signals into a set of second team EEG signals;

determining a plurality of first team cognitive parameter values from said set of first team EEG signals;

determining a plurality of second team cognitive parameter values from said set of second team EEG signals;

determining an updated first current team total cognitive parameter score by summing said plurality of first team cognitive parameter values;

determining an updated second current team total cognitive parameter score by summing said plurality of second team cognitive parameter values;

determining the highest team total cognitive parameter score out of said updated first current team total cognitive parameter score and said updated second current team total cognitive parameter score; and

transferring said first team amount of cryptocurrency and said second team amount of cryptocurrency in said central wallet to the public addresses of said first team users upon determining said updated first current team total cognitive parameter score to be said highest team total cognitive parameter score or transferring said first team amount of cryptocurrency and said second team

amount of cryptocurrency in said central wallet to the public addresses of said second team users upon determining said updated second current team total cognitive parameter score to be said highest team total cognitive parameter score.

14. The method of claim 13, wherein said plurality of first sensors and said plurality of second sensors are EEG sensors.

15. The method of claim 13, wherein said set of first team brainwave signals and said set of second team brainwave signals are selected from the group consisting of alpha waves, beta waves, delta waves, theta waves, and combinations thereof.

16. The method of claim 13, wherein said plurality of first team cognitive parameter values and said plurality of second team cognitive parameter values are selected from the group consisting of focus, excitement, engagement, relaxation, interest, stress, and combinations thereof.

17. The method of claim 13, wherein said plurality of first team cognitive parameter values and said plurality of second team cognitive parameter values are integers.

18. The method of claim 13, wherein said first team amount of cryptocurrency and said second team amount of cryptocurrency are selected from the group consisting of Bitcoin, Ethereum, Tether, Binance Coin, USD Coin, Cardano, Solana, XRP, Terra, Polkadot, Dogecoin, Avalanche, and combinations thereof.

ABSTRACT

A method and system are provided detailing a cognitive parameter-based transfer of cryptocurrency. A first measurement device determines first cognitive parameter values from first electroencephalogram (EEG) signals of a first user. A second measurement device determines second cognitive parameter values from second EEG signals of a second user. The first cognitive parameter values and the second cognitive parameter values are transmitted to a central server, which determines an updated first current total cognitive parameter score by summing the first cognitive parameter values and an updated second current total cognitive parameter score by summing the second cognitive parameter values. After a time period, the central server determines the highest total cognitive parameter score and subsequently transmits a notification signal to transfer a first amount of cryptocurrency and a second amount of cryptocurrency from a central wallet to the public address of the user with the highest total cognitive parameter score.

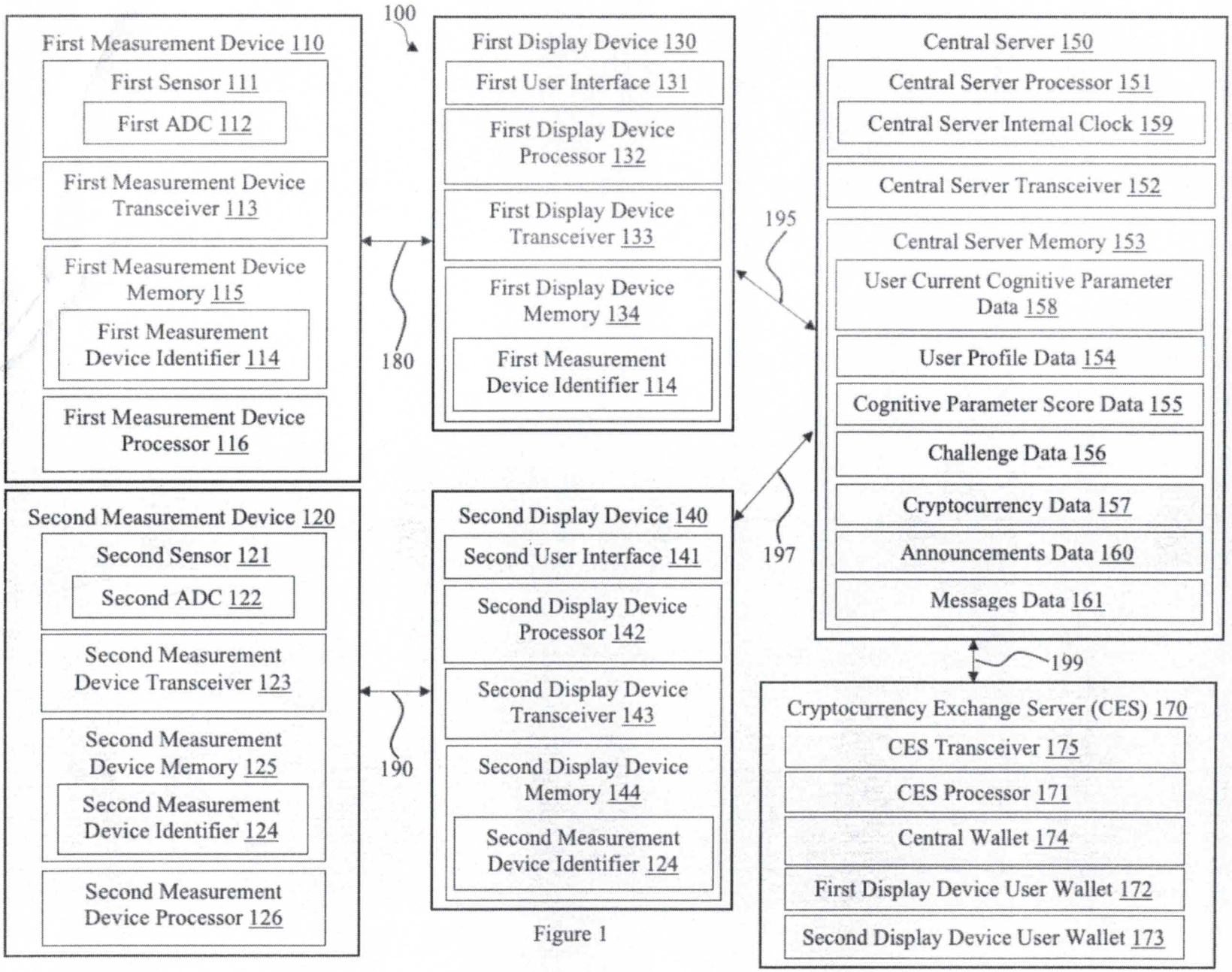
100
First Measurement Device 110
First Sensor 111
First ADC 112
First Measurement Device Transceiver 113
First Measurement Device Memory 115
First Measurement Device Identifier 114
First Measurement Device Processor 116
180
First Display Device 130
First User Interface 131
First Display Device Processor 132
First Display Device Transceiver 133
First Display Device Memory 134
First Measurement Device Identifier 114
195
Central Server 150
Central Server Processor 151
Central Server Internal Clock 159
Central Server Transceiver 152
Central Server Memory 153
User Current Cognitive Parameter Data 158
User Profile Data 154
Cognitive Parameter Score Data 155
Challenge Data 156
Cryptocurrency Data 157
Announcements Data 160
Messages Data 161
Second Measurement Device 120
Second Sensor 121
Second ADC 122
Second Measurement Device Transceiver 123
Second Measurement Device Memory 125
Second Measurement Device Identifier 124
Second Measurement Device Processor 126
190
Second Display Device 140
Second User Interface 141
Second Display Device Processor 142
Second Display Device Transceiver 143
Second Display Device Memory 144
Second Measurement Device Identifier 124
197
199
Cryptocurrency Exchange Server (CES) 170
CES Transceiver 175
CES Processor 171
Central Wallet 174
First Display Device User Wallet 172
Second Display Device User Wallet 173

Figure 1

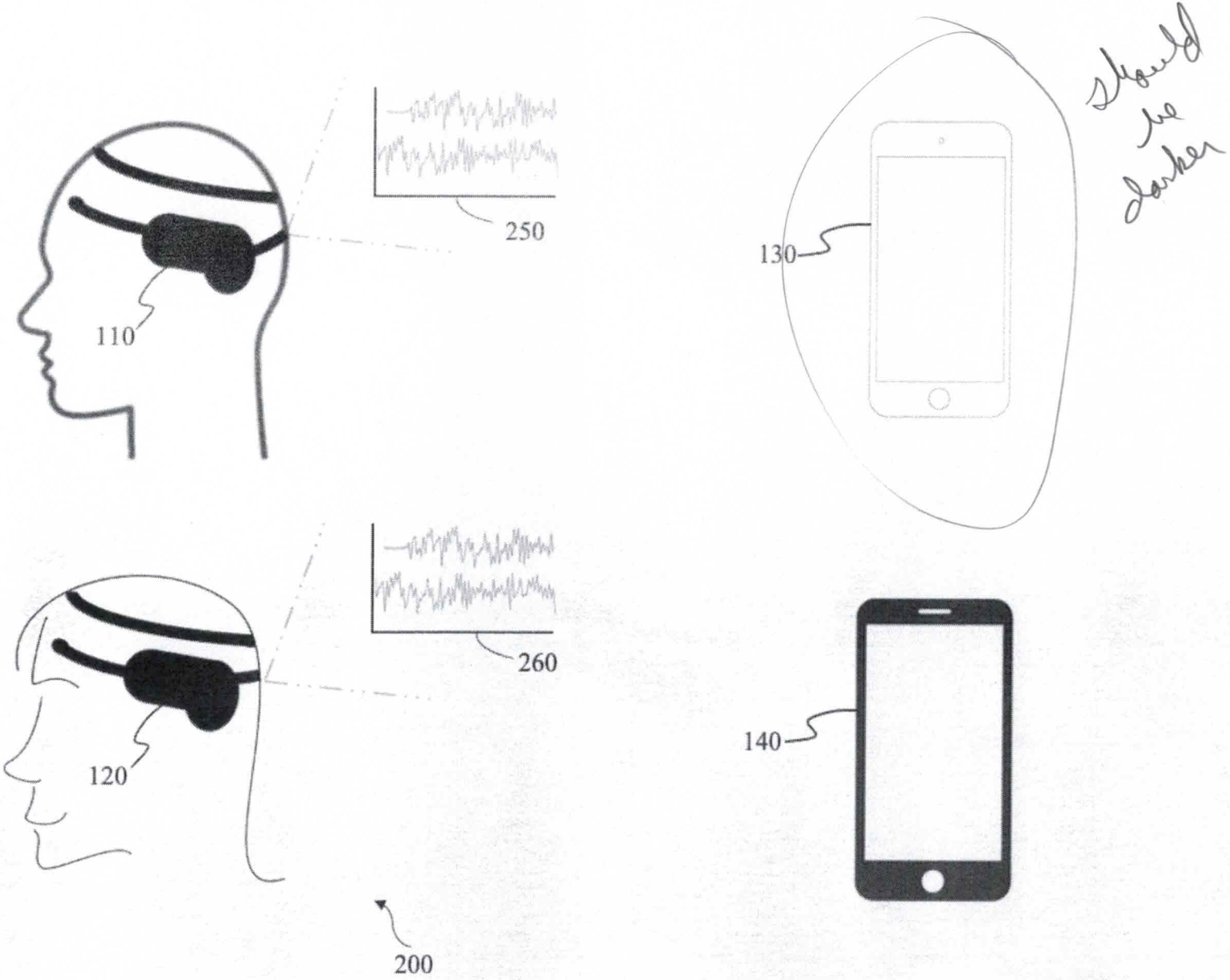

Figure 2

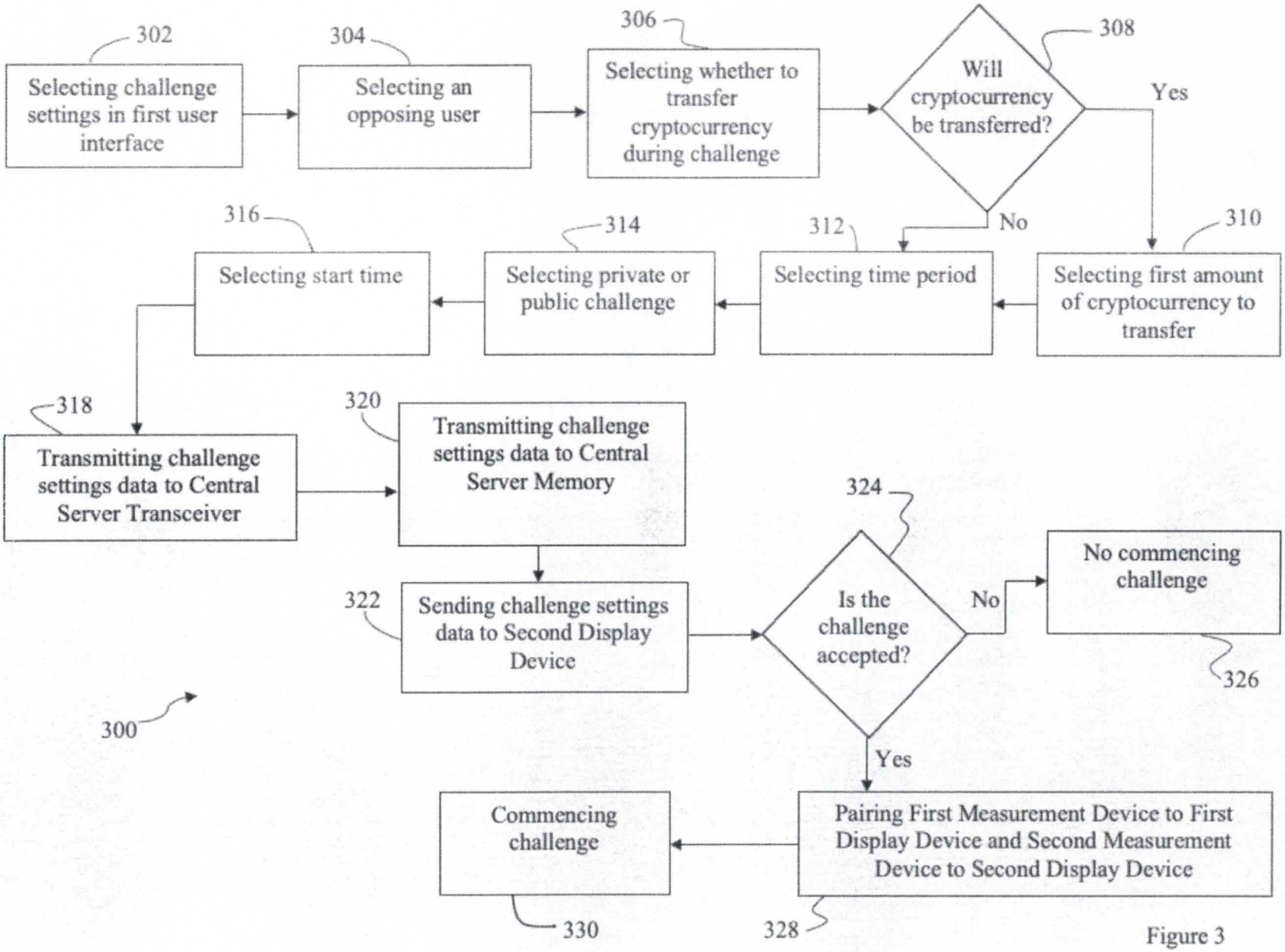
302
Selecting challenge settings in first user interface
304
Selecting an opposing user
306
Selecting whether to transfer cryptocurrency during challenge
308
Will cryptocurrency be transferred?
Yes
No
310
Selecting first amount of cryptocurrency to transfer
312
Selecting time period
314
Selecting private or public challenge
316
Selecting start time
318
Transmitting challenge settings data to Central Server Transceiver
320
Transmitting challenge settings data to Central Server Memory
322
Sending challenge settings data to Second Display Device
324
Is the challenge accepted?
No
No commencing challenge
326
Yes
Pairing First Measurement Device to First Display Device and Second Measurement Device to Second Display Device
328
Commencing challenge
330
300

Figure 3

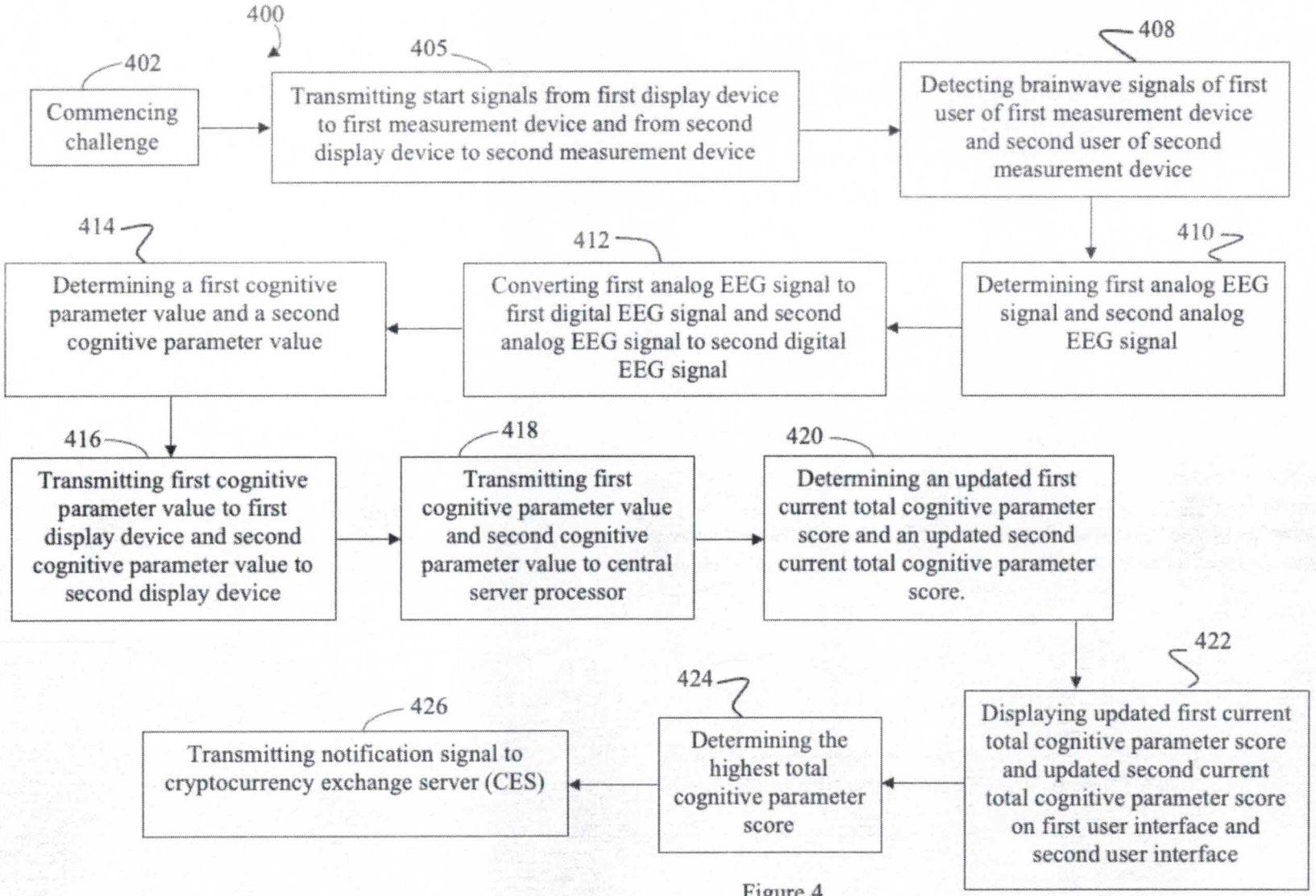
400
402
Commencing challenge
405
Transmitting start signals from first display device to first measurement device and from second display device to second measurement device
408
Detecting brainwave signals of first user of first measurement device and second user of second measurement device
410
Determining first analog EEG signal and second analog EEG signal
412
Converting first analog EEG signal to first digital EEG signal and second analog EEG signal to second digital EEG signal
414
Determining a first cognitive parameter value and a second cognitive parameter value
416
Transmitting first cognitive parameter value to first display device and second cognitive parameter value to second display device
418
Transmitting first cognitive parameter value and second cognitive parameter value to central server processor
420
Determining an updated first current total cognitive parameter score and an updated second current total cognitive parameter score.
422
Displaying updated first current total cognitive parameter score and updated second current total cognitive parameter score on first user interface and second user interface
424
Determining the highest total cognitive parameter score
426
Transmitting notification signal to cryptocurrency exchange server (CES)

Figure 4

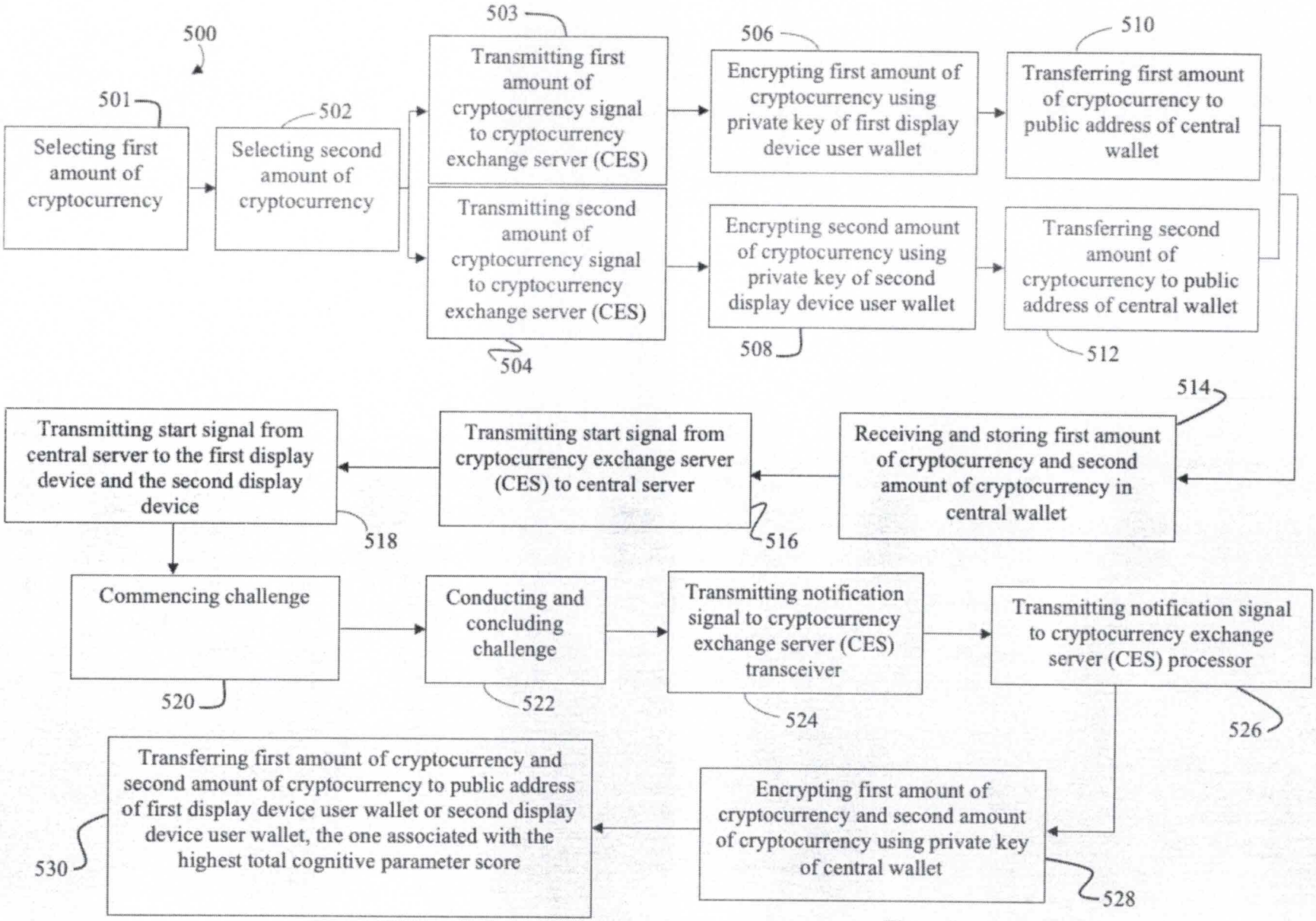
500
501
Selecting first amount of cryptocurrency
502
Selecting second amount of cryptocurrency
503
Transmitting first amount of cryptocurrency signal to cryptocurrency exchange server (CES)
504
Transmitting second amount of cryptocurrency signal to cryptocurrency exchange server (CES)
506
Encrypting first amount of cryptocurrency using private key of first display device user wallet
508
Encrypting second amount of cryptocurrency using private key of second display device user wallet
510
Transferring first amount of cryptocurrency to public address of central wallet
512
Transferring second amount of cryptocurrency to public address of central wallet
514
Receiving and storing first amount of cryptocurrency and second amount of cryptocurrency in central wallet
516
Transmitting start signal from cryptocurrency exchange server (CES) to central server
518
Transmitting start signal from central server to the first display device and the second display device
520
Commencing challenge
522
Conducting and concluding challenge
524
Transmitting notification signal to cryptocurrency exchange server (CES) transceiver
526
Transmitting notification signal to cryptocurrency exchange server (CES) processor
528
Encrypting first amount of cryptocurrency and second amount of cryptocurrency using private key of central wallet
530
Transferring first amount of cryptocurrency and second amount of cryptocurrency to public address of first display device user wallet or second display device user wallet, the one associated with the highest total cognitive parameter score

Figure 5

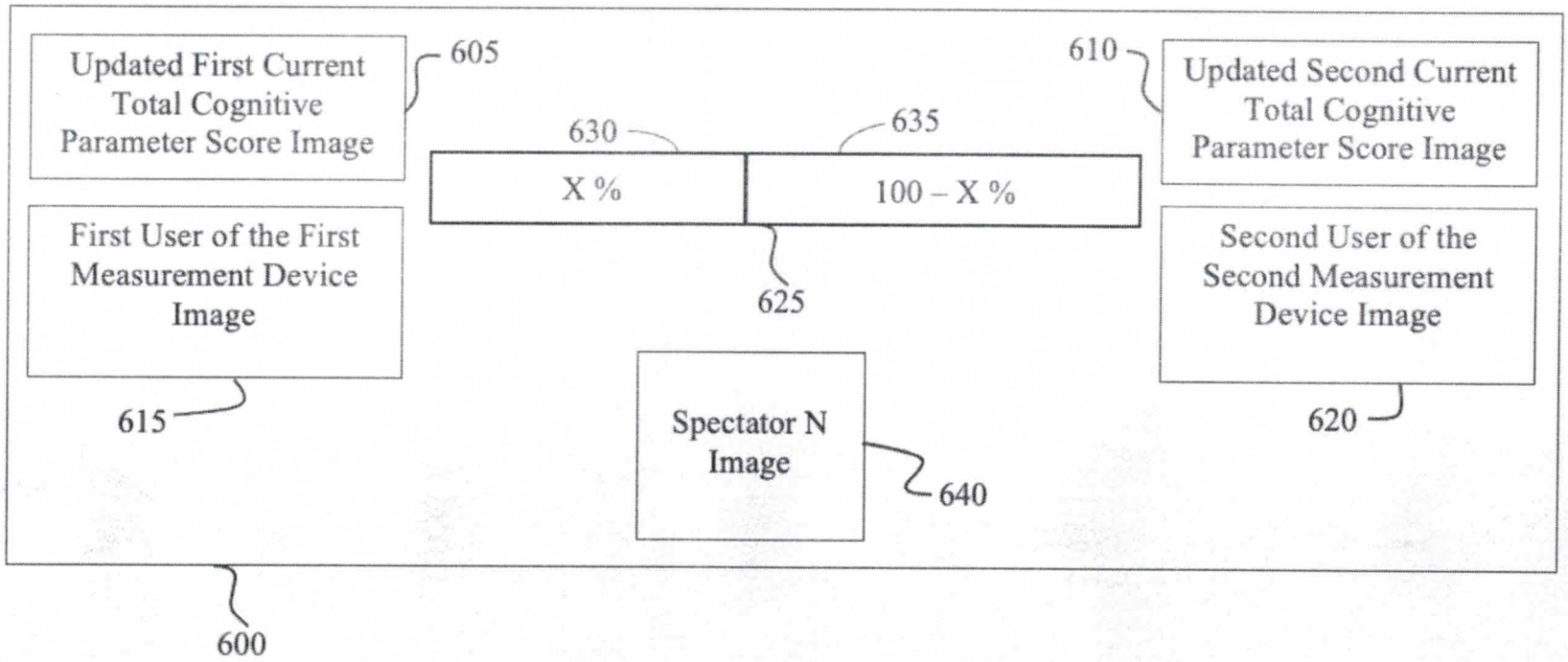
Updated First Current Total Cognitive Parameter Score Image
605
610
Updated Second Current Total Cognitive Parameter Score Image
630
635
X %
100 – X %
625
First User of the First Measurement Device Image
Second User of the Second Measurement Device Image
615
620
Spectator N Image
640
600

Figure 6

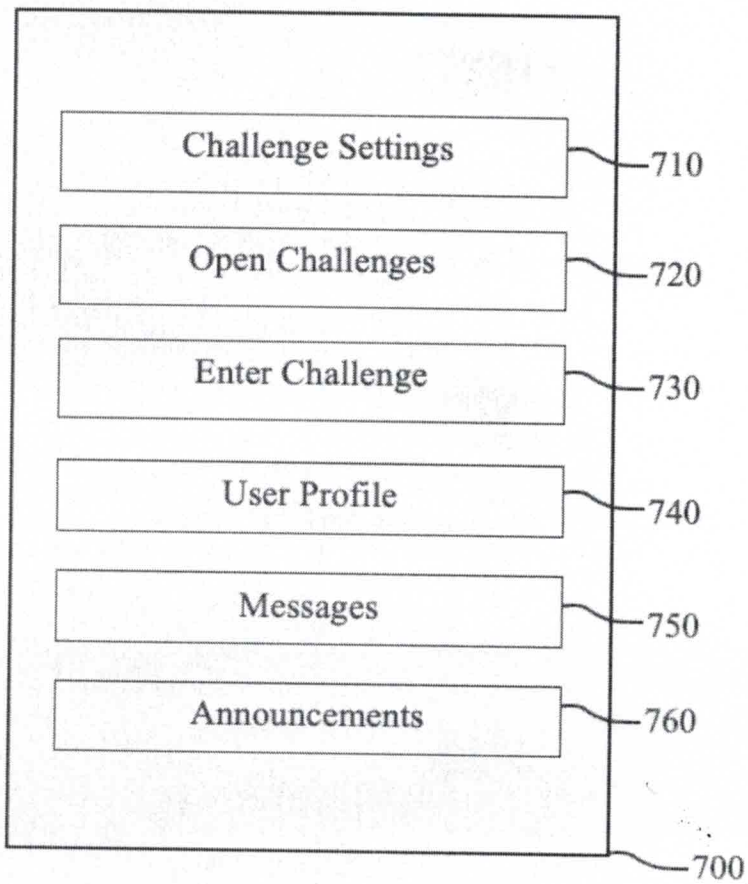
Challenge Settings
710
Open Challenges
720
Enter Challenge
730
User Profile
740
Messages
750
Announcements
760
700

Figure 7

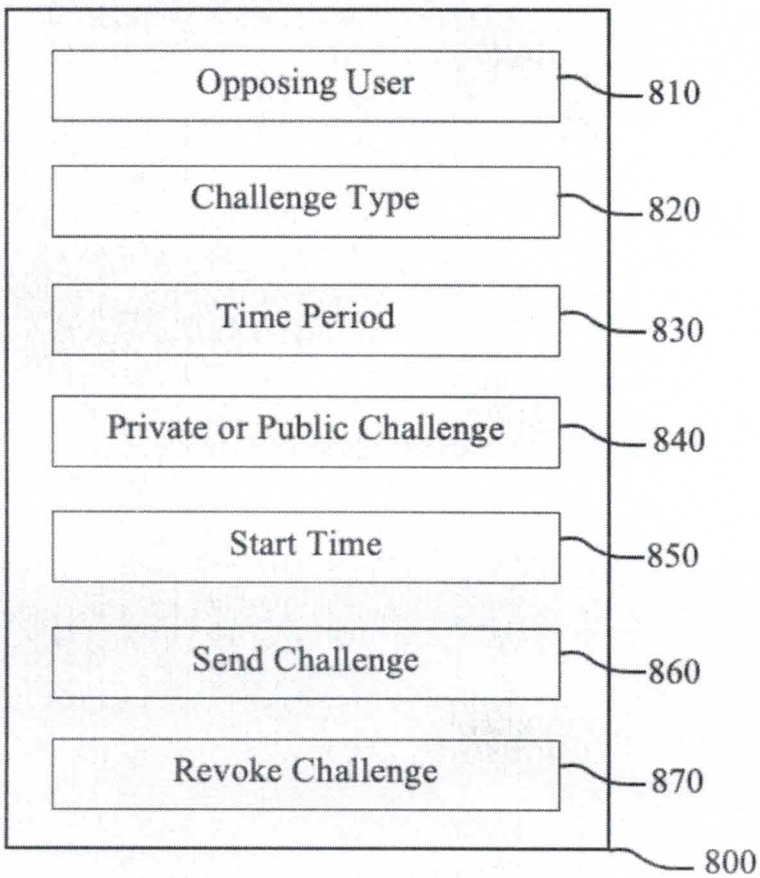
Opposing User
810
Challenge Type
820
Time Period
830
Private or Public Challenge
840
Start Time
850
Send Challenge
860
Revoke Challenge
870
800

Figure 8

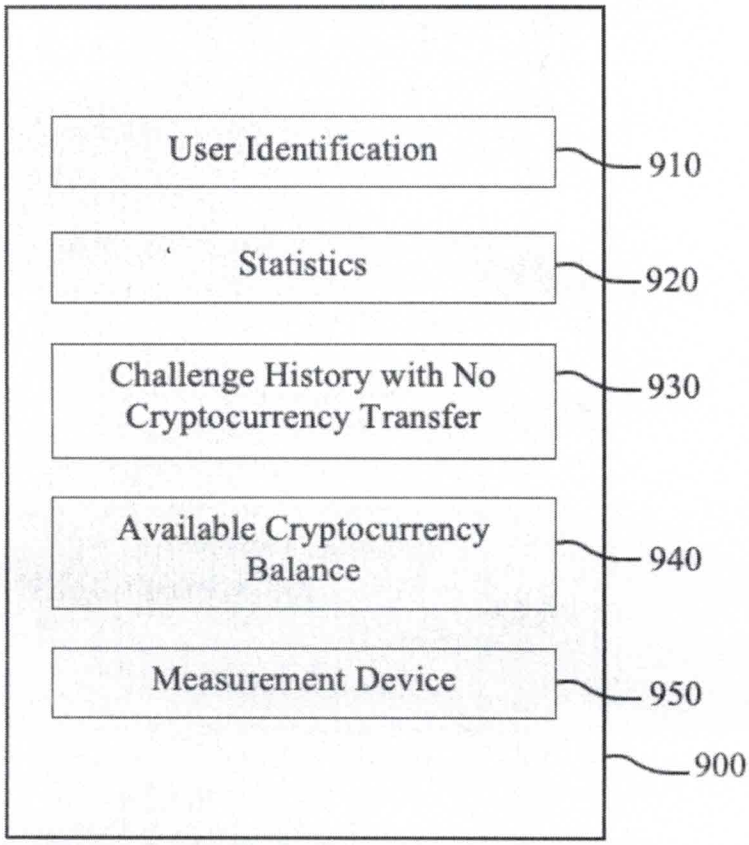
User Identification
910
Statistics
920
Challenge History with No Cryptocurrency Transfer
930
Available Cryptocurrency Balance
940
Measurement Device
950
900

Figure 9

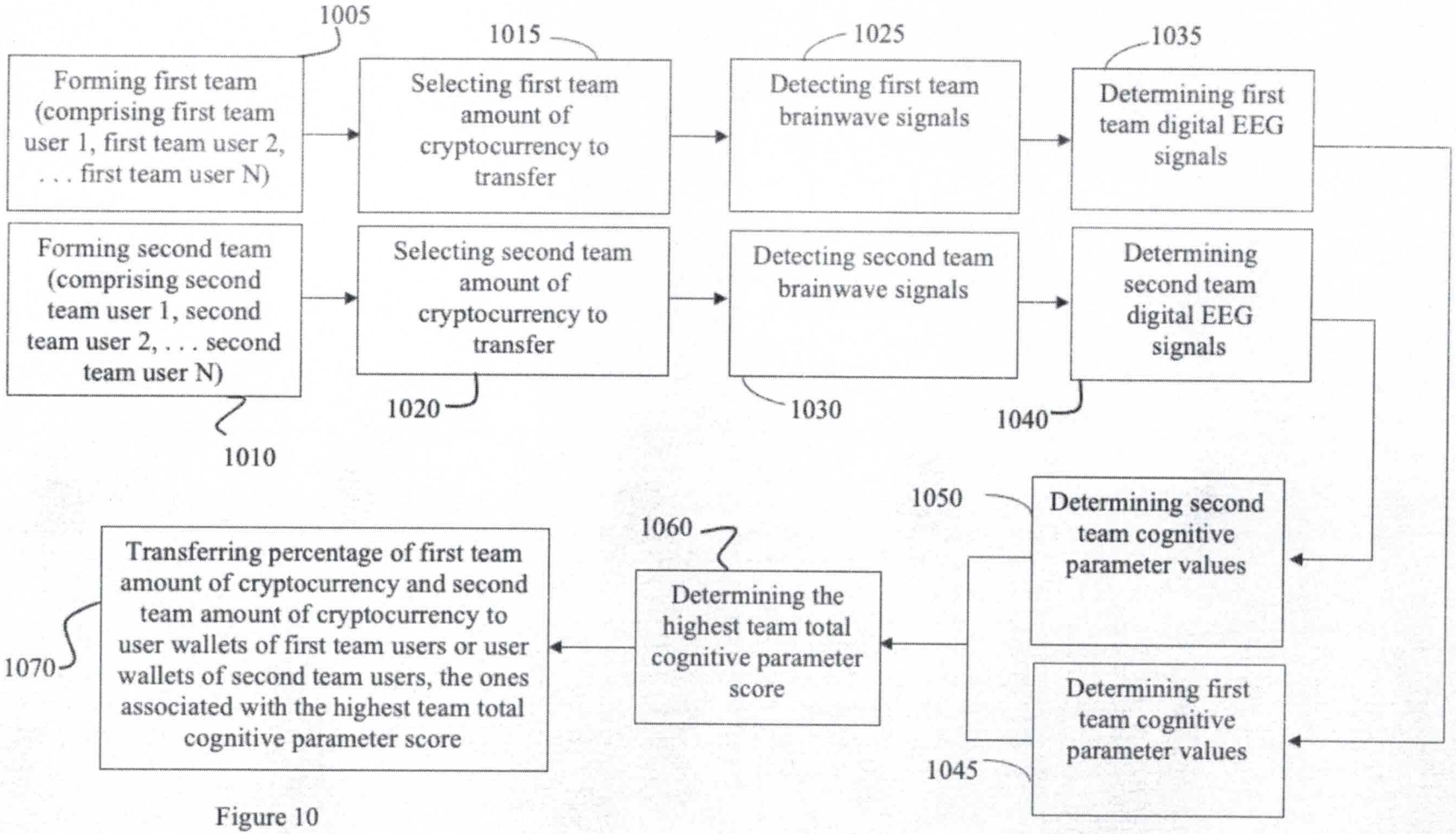
1005
Forming first team (comprising first team user 1, first team user 2, . . . first team user N)
1015
Selecting first team amount of cryptocurrency to transfer
1025
Detecting first team brainwave signals
1035
Determining first team digital EEG signals
Forming second team (comprising second team user 1, second team user 2, . . . second team user N)
1010
Selecting second team amount of cryptocurrency to transfer
1020
Detecting second team brainwave signals
1030
Determining second team digital EEG signals
1040
1050
Determining second team cognitive parameter values
1060
Determining the highest team total cognitive parameter score
Transferring percentage of first team amount of cryptocurrency and second team amount of cryptocurrency to user wallets of first team users or user wallets of second team users, the ones associated with the highest team total cognitive parameter score
1070
Determining first team cognitive parameter values
1045

Figure 10