IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Application of:	
Kalos Daskalos	
Application No.: 21,000,000	Examiner: Daniel Nile
Filed: April 2, 2021	Group Art Unit: 3863
For: AN AUGMENTED REALITY DISPLAY SYSTEM AND METHODS FOR DISPLAYING COGNITIVE PARAMETERS	Attorney Docket No.: 944 Confirmation No.: 1111

AMENDMENT

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Examiner Nile:

This Amendment is in response to the Office Action mailed April 23, 2021. This Amendment is timely because it is being submitted within the period for reply which expires July 23, 2021. Please enter and consider the following:

- Claim identifiers correct

A

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

1. (Currently Amended) A display system comprising:

a measurement device including an electroencephalogram (EEG) sensor, wherein said EEG sensor detects a brainwave signal[[s]] of said user of said measurement device, ~~wherein said EEG sensor passes said brainwave signals through a filter to determine an EEG signal~~ wherein an analog to digital convertor of said measurement device converts said brainwave signal into a digital EEG signal, wherein said measurement device transmits said digital EEG signal;

a server including a server processor and a server memory storing a cognitive parameter dataset, wherein said server receives said digital EEG signal from said measurement device, wherein said cognitive parameter dataset ~~is an EEG signal representing a cognitive state~~ represents a cognitive state, wherein said server processor compares said EEG signal to said cognitive parameter dataset to determine a current cognitive parameter data representing a current cognitive state of said user of said measurement device, wherein said server transmits said current cognitive parameter data; and

a display device including an augmented reality display, a position sensor, and a display memory storing a spatial position data, wherein said display device receives said current cognitive parameter data from said server, wherein a viewing field of said augmented reality display is a current pointing angular range of said display device ~~including a detecting using a position sensor~~ representing a plurality of pointing angles of said display device between a rightmost side pointing angle of said viewing field of said augmented reality display and a leftmost side pointing angle of said viewing field of said augmented reality display, wherein said position sensor detects said plurality of pointing angles of said display device, wherein said spatial position data represents a pointing angle of said display device, wherein said current cognitive parameter data is displayed using said augmented reality display when said spatial position data matches a pointing angle of said plurality of pointing angles detected by said position sensor. ~~of said current pointing angular range of said viewing field of said augmented reality display.~~

2. (Original) The system of claim 1, wherein said current cognitive parameter data is an integer.

3. (Original) The system of claim 1, wherein said current cognitive parameter data is a bar graph.

4. (Original) The system of claim 1, further including a plurality of measurement devices and a user of each said plurality of measurement devices.

5. (Previously Presented) The system of claim 1, said server memory further including a plurality of cognitive parameter datasets, wherein a plurality of current

cognitive parameter data is determined from comparing said EEG signal to each said plurality of cognitive parameter datasets.

6. (Previously Presented) The system of claim 1, wherein said measurement device further includes a motion sensor, wherein said motion sensor detects a current pointing angle of said measurement device, wherein said motion sensor uses said current pointing angle of said measurement device to determine a motion data representing an angle in degrees.

7. (Previously Presented) The system of claim 1, further including a plurality of measurement devices and a user of each said plurality of measurement devices, wherein said display device further includes a database, wherein said database includes a plurality of display data storage units, wherein each of said plurality of display data storage units stores a spatial position data and a current cognitive parameter data for a measurement device of the said plurality of measurement devices.

8. (Currently Amended) A method comprising:

detecting a quick response (QR) code positioned on a measurement device using a camera of a display device, wherein said QR code positioned on said measurement device represents a unit identification (ID) data identifying said measurement device;

determining a QR code data from said QR code;

decoding said QR code data into said unit ID data of said measurement device;

storing said unit ID data in a display data storage unit stored in a memory of said display device, wherein said display data storage unit includes said unit ID data[[,]] and a

first photographic image data~~, and a spatial position data representing a pointing angle of said display device~~;

detecting a detected photographic image representing a user of said measurement device using said camera;

generating a second photographic image data representing said detected photographic image of said user of said measurement device using said camera;

detecting a current pointing angle of said display device using a position sensor of said display device when said first photographic image data matches said second photographic image data, ~~representing a center pointing angle of a current pointing angular range of a viewing field of an augmented reality display of said display device~~ wherein said current pointing angle represents a pointing angle centered between a rightmost side pointing angle ~~of said viewing field~~ of said augmented reality display and a leftmost side pointing angle ~~of said viewing field~~ of said augmented reality display ~~using a position sensor~~ of said display device ~~when said first photographic image data matches said second photographic image data~~;

determining said spatial position data representing said current pointing angle of said display device using said position sensor; and

storing said spatial position data in said display data storage unit.

9. (Previously Presented) The method of claim 8, said display device further including a database, wherein said database includes a plurality of display data storage units.

10. (Previously Presented) The method of claim 8, further including a plurality of measurement devices, wherein each of the plurality of measurement devices includes a QR code positioned on each of said plurality of measurement devices, wherein each of the plurality of measurement devices has a user.

11. (Original) The method of claim 8, wherein said display device further includes a touchpad, wherein said touchpad controls the zoom of the camera.

12. (Previously Presented) The method of claim 8, wherein said display device further includes a touchpad, wherein said touchpad ~~to~~ initializes the position sensor to detect said current pointing angle of said display device.

13. (Previously Presented) The method of claim 8, further comprising detecting a user photographic image using said camera;

generating said first photographic image data representing said user photographic image; and

storing said first photographic image in said display data storage unit.

14. (Currently Amended) A method, comprising:

detecting a brainwave signal[[s]] of a user of a measurement device using an EEG sensor of said measurement device;

whole word replace

determining an EEG signal from said brainwave signal[[s]];

transmitting said EEG signal and a unit ID data stored in said measurement device using said measurement device, wherein said unit ID data represents data identifying said measurement device;

receiving said EEG signal and said unit ID data using a server; wherein said server includes a server processor and a cognitive parameter dataset, wherein said cognitive parameter dataset ~~is an EEG signal~~ represent~~ings~~ a cognitive state;

determining a current cognitive parameter data representing a current cognitive state of said user of said measurement device from comparing said EEG signal to said cognitive parameter dataset using said server processor;

transmitting said current cognitive parameter data and said unit ID data using said server;

receiving said current cognitive parameter data and said unit ID data using a display device, wherein said display device includes a position sensor, an augmented reality display, and a display data storage unit, wherein said display data storage unit includes a stored unit ID data, a spatial position data, ~~and a current cognitive parameter data~~, wherein said spatial position data represents a pointing angle of said display device;

storing said current cognitive parameter data in said display data storage unit when said unit ID data matches said stored unit ID data;

detecting a plurality of pointing angles in a current pointing angular range of a viewing field of said augmented reality display of said display device between a rightmost side pointing angle of said viewing field of said augmented reality display and a leftmost side pointing angle of said viewing field of said augmented reality display using said position sensor; and

displaying said current cognitive parameter data using said augmented reality display when said spatial position data matches a pointing angle of said current pointing angular range of said viewing field of said augmented reality display detected using said position sensor.

15. (Previously Presented) The method of claim 14, further comprising not displaying said current cognitive parameter data using said augmented reality display when said spatial position data does not match a pointing angle of said current pointing angular range of said viewing field of said augmented reality display.

16. (Previously Presented) The method of claim 14, further comprising setting a threshold cognitive parameter value;

Displaying and highlighting said current cognitive parameter data using said augmented reality display when said spatial position data matches a pointing angle of said current pointing angular range of said viewing field of said augmented reality display and said current cognitive parameter data is below said threshold cognitive parameter value.

17. (Previously Presented) The method of claim 14, further comprising setting a threshold cognitive parameter value;

Displaying and not highlighting said current cognitive parameter data using said augmented reality display when said spatial position data matches a pointing angle of said current pointing angular range of said viewing field of said augmented reality

display and said current cognitive parameter data is not below said threshold cognitive parameter value.

18. (Original) The method of claim 14, further comprising setting a threshold cognitive parameter value;

Displaying a directional indicator representing an arrow in the direction of said spatial position data using said augmented reality display when said spatial position data is not in the viewing field of the augmented reality display and said current cognitive parameter data is below said threshold cognitive parameter value.

19. (Previously Presented) The method of claim 14, further comprising setting a threshold cognitive parameter value;

Displaying and highlighting said current cognitive parameter data using said augmented reality display when said spatial position data matches a pointing angle of said current pointing angular range of said viewing field of said augmented reality display and said current cognitive parameter data is above said threshold cognitive parameter value.

20. (Original) The method of claim 14, further comprising setting a threshold cognitive parameter value;

Displaying a directional indicator representing an arrow in the direction of said spatial position data using said augmented reality display when said spatial position data is not in the viewing field of the augmented reality display and said current cognitive parameter data is above said threshold cognitive parameter value.

REMARKS

The present application includes claims 1-20. Claims 1-20 were rejected. By this Amendment claims 1, 8, and 14 have been amended.

Claims 1-20 were rejected under 35 U.S.C. §112(b) as being indefinite.

Claims 1-20 were rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter.

Claims 1-7 and 14-20 were rejected under 35 U.S.C. §102(a)(1) as being anticipated by Mullins, U.S. Pat. App. No. 2021/0092081.

Claims 1-7 and 14-20 were rejected under 35 U.S.C. §102(a)(1) as being anticipated by Mueller, U.S. Pat. App. No. 2020/0327733.

Claims 1-7 and 14-20 were rejected under 35 U.S.C. §102(a)(1) as being anticipated by Heo, U.S. Pat. App. No. 2021/0103426.

Claims 8-13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Mullins, U.S. Pat. App. No. 2021/0092081, in view of Wang, U.S. Pat. App. No. 2021/0110161.

The Applicant now turns to the rejection of claims 1-20 under 35 U.S.C. § 112(b) as being indefinite. Claim 1 has been amended. An appropriate correction has been made to the limitation "wherein said EEG sensor passes said brainwave signals through a filter." As amended clam 1 recites "wherein an analog to digital convertor of said

measurement device converts said brainwave signal into a digital EEG signal." An appropriate correction has been made to clarify the cognitive parameter dataset being an EEG signal. As amended, claim 1 recites "wherein said cognitive parameter dataset represents a cognitive state." Claim 1 has further been amended to clarify the limitations of the viewing field of the display device and a current pointing angular range. As amended, Claim 1 recites "wherein a viewing field of said augmented reality display is a current pointing angular range of said display device representing a plurality of pointing angles of said display device between a rightmost side pointing angle of said viewing field of said augmented reality display and a leftmost side pointing angle of said viewing field of said augmented reality display . . . wherein said spatial position data represents a pointing angle of said display device, wherein said current cognitive parameter data is displayed using said augmented reality display when said spatial position data matches a pointing angle of said plurality of pointing angles detected by said position sensor."

Claim 8 has been amended. To clarify, "said detected photographic image" has an antecedent basis with "a detected photographic image" when the examiner stated there was no antecedent basis for "said detected photographic image." An amendment has been made to clarify the limitation "determining a second photographic image." As amended, claim 8 recites "detecting a detected photographic image representing a user of said measurement device using said camera; generating a second photographic image data representing said detected photographic image of said user of said measurement device using said camera." Additionally, appropriate corrections have been made to claim 8 to

clarify how the position sensor determines a pointing angle. As amended, claim 8 recites "detecting a current pointing angle of said display device using a position sensor of said display device when said first photographic image data matches said second photographic image data, wherein said current pointing angle represents a pointing angle centered between a rightmost side pointing angle of said augmented reality display and a leftmost side pointing angle of said augmented reality display of said display device." Claim 8 has also been amended to clarify the spatial position data stored in the display data storage unit. As amended, claim 8 recites "wherein said display data storage unit includes said unit ID data and a first photographic image data" so the spatial position data is not stored in the display data storage unit until it is determined.

Claim 14 has been amended to clarify the cognitive parameter dataset limitation. As amended, claim 14 recites "wherein said cognitive parameter dataset represents a cognitive state."

Consequently, it is respectfully submitted that claims 1-20 are in compliance with 35 U.S.C. § 112(b).

The Applicant now turns to the rejection of claims 1-20 under 35 U.S.C. § 101 as being directed to non-statutory subject matter. The examiner apparently agrees that claim 1 is directed to a system and claims 8 and 14 are directed to methods for a process, which are statutory categories of invention, but finds that the claims are directed to an abstract

idea of merely detecting, storing, and transmitting data that do not recite significantly more than the abstract idea.

The relevant considerations to be taken into account when making a rejection under 35 U.S.C. § 101 are set forth in the 2019 Revised Patent Subject Matter Eligibility Guidance (issued January 7, 2019) (hereinafter "January 2019 PEG") as well as the October 2019 Patent Eligibility Guidance Update (issued October 17, 2019) (hereinafter "October 2019 PEGU"). The January 2019 PEG revised Step 2A of the PTO's previous patent eligibility guidance by separating Step 2A into a two-prong inquiry. In the first prong, it is determined whether the claim recites an abstract idea. In the second prong, the claim is still allowable, even if the claim recites an abstract idea, when the claim recites additional elements that integrate the judicial exception into a practical application.

When making a determination under the second prong of Step 2A as to whether the claim includes additional limitations that integrate the claim into a practical application, the PTO has provided specific examples of limitations that are indicative of integration into a practical application. Relevant examples include (emphasis added)

> Applying the judicial exception with, or by use of, a particular machine
>
> Applying or using the judicial exception in some other meaningful way beyond generally linking the use of the judicial exception to a particular technological environment, such that the claim as a whole is more than a drafting effort designed to monopolize the exception.

Independent claims 1, 8, and 14 of the present invention are each, as a whole, more than a drafting effort to monopolize the abstract idea of detecting, transmitting and storing data. Claim 1 and 14 include specific limitations on detecting brainwave signals

This would be better if it focused more on the computer/machine components rather than the data

using an EEG sensor of a measurement device, determining an EEG signal from the detected brainwaves, determining a current cognitive parameter data from comparing the EEG signal to a cognitive parameter dataset, and displaying the current cognitive parameter data on a display device using a augmented reality display of a display device. This is a practical application used to determine and display real-time cognitive parameter data of users, such as students, in the viewing field of a user of a display device, such as a teacher.

Good job! You researched other examples

Example 27 of the PTO's "abstract idea examples 21-27" (issued July 30, 2015) recites a basic input/output system (BIOS) claim as being eligible under 35 U.S.C. § 101. In regards to the claim's eligibility, "the claim's description of initializing a local computer system using BIOS code stored at a remote memory location, by triggering the processor to transfer BIOS code between two memory locations upon a powering up of the computer and transferring control of the processor operations to that BIOS code, makes it clear that the claim as a whole would clearly amount to significantly more than any potential recited exception." Clearly, independent claims 1, 8, and 14 do significantly more than any potential recited exception. The claims particularly describe the system and methods of an augmented reality display device used to display real-time cognitive parameter data of a user of a measurement device to a user of the display device.

Thus, the Applicant respectfully submits that independent claims 1, 8 and 14 comply with the requirements of 35 U.S.C. § 101 and are allowable, as are claim 2-7, 9-13, and 15-20 depending on these claims.

The Applicant now turns to the rejection of claims 1-7 and 14-20 under 35 U.S.C. § 102(a)(1) as being anticipated by Mullins. Mullins teaches a directional augmented reality system for displaying augmented reality content on a transparent display of a head-mounted device (HMD) worn by a first user. The location of a second user of a second HMD is tracked using sensors of the first HMD and the first HMD will output augmented reality content based on audio content of the second user of the second HMD received by the first HMD. Paragraphs [0036-0038] of the Mullins reference disclose the possible sensor data of the user of the HMD and the HMD. Paragraph [0043] teaches how data from the sensors may be processed at the server based on how the user is interacting with the physical environment. Paragraph [0065] teaches storing data for identifying devices limited images of objects and corresponding experiences.

Mullins does not teach current cognitive parameter data representing a cognitive state of a user determined at the server. Mullins also does not teach a unit ID data identifying the measurement device that is transmitted between multiple devices to store a current cognitive parameter data in the correct display data storage unit.

Claim 1 recites "wherein said server processor compares said EEG signal to said cognitive parameter dataset to determine a current cognitive parameter data representing a current cognitive state of said user of said measurement device."

Claim 14 recites "storing said current cognitive parameter data in said display data storage unit when said unit ID data matches said stored unit ID data."

Consequently, independent claims 1 and 14 are respectfully submitted to be free of the prior art and allowable, as are their respective dependent claims 2-7 and 15-20.

The Applicant now turns to the rejection of claims 1-7 and 14-20 under 35 U.S.C. § 102(a)(1) as being anticipated by Mueller. Mueller teaches an augmented reality retrieval image system where an application is coupled to an image server. The application captures a real-world object and overlays an image from the database on a real-world object. A user of the application may visualize the real-world object overlayed with the image from the image server and modify the image as it appears on the real-world object. Paragraph [107] teaches a method of capturing a an image of an object and determining the display of the object based on the distance determined by the distance sensor. Paragraph [113] teaches a brain computer interface used as an input device and a display device.

Mueller does not teach current cognitive parameter data representing a cognitive state of a user determined at the server. Mullins also does not teach a unit ID data identifying the measurement device that is transmitted between multiple devices to store a current cognitive parameter data in the correct display data storage unit.

Claim 1 recites "wherein said server processor compares said EEG signal to said cognitive parameter dataset to determine a current cognitive parameter data representing a current cognitive state of said user of said measurement device."

again, stole specifically
NOTE: Examiner may only read this paragraph

Claim 14 recites "storing said current cognitive parameter data in said display data storage unit when said unit ID data matches said stored unit ID data."

Consequently, independent claims 1 and 14 are respectfully submitted to be free of the prior art and allowable, as are their respective dependent claims 2-7 and 15-20.

The Applicant now turns to the rejection of claims 1-7 and 14-20 under 35 U.S.C. § 102(a)(1) as being anticipated by Heo. Heo teaches a method for controlling a wearable device which includes obtaining an image from a camera of the wearable device with an object appearing in the image at a first time point. At a second time point, audio of a user is recorded using a microphone and information based on the audio of a user is identified and outputted. Paragraph [0073] teaches detecting brainwave signals and determining brainwave signals from a sensor. Paragraph [0098] teaches image data and location data of an object in a wearable device's database and transmitting both data to a server.

Heo does not teach current cognitive parameter data representing a cognitive state of a user determined at the server. Mullins also does not teach a unit ID data identifying the measurement device that is transmitted between multiple devices to store a current cognitive parameter data in the correct display data storage unit.

Claim 1 recites "wherein said server processor compares said EEG signal to said cognitive parameter dataset to determine a current cognitive parameter data representing a current_cognitive state of said user of said measurement device."

Claim 14 recites "storing said current cognitive parameter data in said display data storage unit when said unit ID data matches said stored unit ID data."

Consequently, independent claims 1 and 14 are respectfully submitted to be free of the prior art and allowable, as are their respective dependent claims 2-7 and 15-20.

The Applicant now turns to the rejection of claims 8-13 under 35 U.S.C. § 103(a) as being unpatentable over Mullins in view of Wang. Mullins teaches a directional augmented reality system for displaying augmented reality content on a transparent display of a head-mounted device (HMD) worn by a first user. The location of a second user of a second HMD is tracked using sensors of the first HMD and the first HMD will output augmented reality content based on audio content of the second user of the second HMD received by the first HMD. Paragraphs [0036-0038] of the Mullins reference disclose the possible sensor data of the user of the HMD and the HMD. Paragraph [0043] teaches how data from the sensors may be processed at the server based on how the user is interacting with the physical environment. Paragraph [0065] teaches storing data for identifying devices limited images of objects and corresponding experiences.

Wang teaches a virtual try-on system for eyeglass frames. Wang teaches a system including a host device connected through a network to other servers for determining image data. The host device includes an augmented reality generation module for generating an augmented reality webpage data. The host device displays the augmented reality webpage data on the host device. Wang teaches [0032] a quick response (QR)

code that can be recognized by the host device with the QR code corresponding to a URL of an augmented reality webpage. After reading the QR code [0034], images of a plurality of eyeglass frames are displayed on a touch screen of the host device.

Mullins and Wang do not teach a QR code representing unit ID data identifying a measurement device that is transmitted between multiple devices to store a unit ID data in a display data storage unit of the display device.

Claim 8 recites "detecting a quick response (QR) code positioned on a measurement device using a camera of a display device, wherein said QR code positioned on said measurement device represents a unit identification (ID) data identifying said measurement device; determining a QR code data from said QR code; decoding said QR code data into said unit ID data of said measurement device; storing said unit ID data in a display data storage unit stored in a memory of said display device."

Consequently, independent claim 8 is respectfully submitted to be free of the prior art and allowable, as are their respective dependent claims 9-13.

CONCLUSION

If the Examiner has any questions or the Applicant can be of any assistance, the Examiner is invited and encouraged to contact the Applicant at the number below.

The Commissioner is authorized to charge any necessary fees or credit any overpayment to the Deposit Account of 944, Account No. 944.

Respectfully submitted,

make sure this is date of filing

Date: April 29, 2021

/944/
944
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