IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Application of:

    Kalos Daskalos

Application No.:   21/000,000

Filed: April 2, 2021

For: AN AUGMENTED REALITY
    DISPLAY SYSTEM AND
    METHODS FOR DISPLAYING
    COGNITIVE PARAMETERS

Examiner: Daniel Nile

Group Art Unit: 3683

Attorney Docket No.: 944

Confirmation No.:   1111

AMENDMENT

Mail Stop Amendment
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 9, 2021. This Amendment is timely because it is being submitted within the period for reply which expires July 9, 2021. Please enter and consider the following:

[Handwritten annotations:]
- claim identifiers ok
- some good arguments
- good try at 101 argument — some 102s need work

[Handwritten: circled "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 <u>display</u> system comprising:

a measurement device including an electroencephalogram (EEG) sensor, wherein

said EEG sensor detects brainwave signals of said user of said measurement device,

<u>wherein said EEG sensor passes said brainwave signals through a filter</u> to determine an

EEG signal, wherein said measurement device transmits said EEG signal;

a server including a server processor and a <u>server</u> memory storing a cognitive

parameter dataset, wherein said server receives said EEG signal from said measurement

device, <u>wherein said cognitive parameter dataset is an EEG signal representing a</u>

<u>cognitive state,</u> wherein said server processor compares said EEG signal to said cognitive

parameter dataset to determine a current cognitive parameter data representing a <u>current</u>

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

<u>display</u> memory storing a spatial position data, wherein said display device receives said

current cognitive parameter data from said server, wherein ~~said position sensor detects an~~

~~angular position of said display device in~~ a viewing field of said augmented reality

data, a first photographic image data, and a spatial position data representing a pointing

angle of said display device;

detecting a detected photographic image using said camera;

~~determining~~ generating a second photographic image data ~~from~~ representing said

detected photographic image using said camera;

detecting ~~an angular position~~ a current pointing angle of said display device

representing a center pointing angle of a current pointing angular range of a viewing field

of an augmented reality display of said display device 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 ~~from~~ representing said ~~angular position~~

current pointing angle of said display device using said position sensor; and

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

9.   (Currently Amended) The method of claim 8, said display device further

including a database, wherein said database includes a plurality of display ~~profiles~~ data

storage units.

10.   (Currently Amended) The method of claim 8, further including a plurality

of measurement devices, wherein each of the plurality of measurement devices includes a

QR code <u>positioned on each of said plurality of measurement devices,</u> 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.   (Currently Amended) The method of claim 8, wherein said display device

further includes a touchpad, wherein said touchpad ~~to~~ initial<u>izes</u> the position sensor to

detect said ~~angular position~~ <u>current pointing angle of said display device.</u>

NO – change whole word

13.   (Currently Amended) The method of claim 8, further comprising detecting

a user photographic image using said camera;

~~Determining~~ <u>generating</u> said first photographic image data ~~from~~ <u>representing</u> said

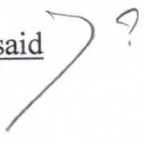user photographic image; and

storing said first photographic image in said display ~~profile~~ <u>data storage unit.</u>

14.   (Currently Amended) A method, comprising:

detecting brainwave signals of a user of a measurement device using an EEG

sensor of said measurement device;

determining an EEG signal from said brainwave signals;

transmitting said EEG signal and a unit ID data ~~of~~ <u>stored in</u> said measurement

device using said measurement device<u>, wherein said unit ID data represents data</u>

<u>identifying said measurement device;</u>

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 representing 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 ~~profile~~ data storage unit, wherein said display ~~profile~~ 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 ~~profile~~ data storage

unit when said unit ID data matches said stored unit ID data;

detecting ~~an angular position of said display device~~ a plurality of pointing angles

in a current pointing angular range ~~in~~ 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

~~determining a detected spatial position data from said angular position using said position sensor; and~~

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

15.   (Currently Amended) 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 ~~said detected spatial position data~~ <u>a pointing angle of said current pointing angular range of said viewing field of said augmented reality display</u>.

16.   (Currently Amended) 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 ~~said detected spatial position data~~ <u>a pointing angle of said current pointing angular range of said viewing field of said augmented reality display</u> and said current cognitive parameter data is below said threshold cognitive parameter value.

17.   (Currently Amended) 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 ~~said detected spatial position data~~ 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.   (Currently Amended) 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 ~~said detected spatial position data~~ 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, 5-10, 12-17, 19 have been amended. *No claims canceled or added* ✓

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

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

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

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 clarify the meaning of the limitation "detects brainwave signals of a user of said measurement device to determine an EEG signal." As amended, claim 1 recites "detects brainwave signals of said user of said measurement device, wherein said EEG sensor passes said brainwave signals through a filter to determine an EEG signal." An appropriate correction has been made to clarify relationship between the cognitive

parameter dataset and the cognitive state. As amended, claim 1 recites "wherein said

cognitive parameter dataset is an EEG signal representing 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." Furthermore, to clarify "a memory" used twice, claim

1 has been amended to clarify "a memory" reciting "a server memory" and "a display

memory." Additionally, appropriate corrections have been made to clarify the meaning of

the limitations "in a viewing field of said augmented reality display", "centered on a

current pointing angle", and "to determine detected spatial data." As amended, claim 1

recites "wherein a viewing field of said augmented reality display is a current pointing

angular range of said display device including detecting using a position sensor 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 current pointing angular range of

said viewing field of said augmented reality display." Claims 5-7 depending on claim 1

have likewise been amended in a parallel manner with the same language.

Claim 8 has further been amended. To further clarify the limitation "QR code of a

measurement device," claim 8 has been amended to recite "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." Claim 8 has further been amended to clarify the decoding of the QR code data. Claim 8 recites "decoding said QR code data into said unit ID data of said measurement device. Claim 8 has been amended to change "a display profile" to a structural term now reciting "a display data storage unit". Clam 8 has also been amended to clarify the limitation "determining a second photographic image data." Claim 8 has been amended to recite "generating a second photographic image data representing said detected photographic image using said camera." Clam 8 has also been amended to clarify the limitation "determining said spatial position data." Claim 8 has been amended to recite "detecting a current pointing angle of said display device representing a center pointing angle of a current pointing angular range of a viewing field of an augmented reality display of said display device 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." Claims 9-10 and 12-13 depending on claim 8 have likewise been amended in a parallel manner with the same language.

Claim 14 has been amended. An appropriate correction has been made to clarify where the unit ID data comes from or how it relates to the measurement device. Claim 14 as amended recites "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." An appropriate correction has been made to clarify how the cognitive parameter dataset is used to determine the cognitive parameter data. Claim 14 as amended recites "wherein said server includes a server processor and a cognitive parameter dataset, wherein said cognitive parameter dataset is an EEG signal representing 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." Claim 14 has been amended to change "a display profile" to a structural term now reciting "a display data storage unit". Claim 14 has also been amended to clarify the "viewing field" limitation. As amended, claim 14 recites "detecting a plurality of pointing angles in a current pointing angular range ~~in~~ 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." Claims 15-17 and 19 depending on claim 14 have likewise been amended in a parallel manner with the same language.

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 clearly recites a practical application – displaying cognitive parameter data of a user when the user's spatial position data matches a pointing angle of the display device in the viewing field of the display device – and is integrated into a highly specific computerized system. Specific limitations of determining an EEG signal at the measurement device is disclosed. Claim 1, as amended, recites "wherein said EEG sensor passes said brainwave signals through a filter to determine an EEG signal." More specifically, the server uses the EEG signal to determine a current cognitive parameter data using a cognitive parameter dataset. Claim 1, as amended, recites "wherein said cognitive parameter dataset is an EEG signal representing 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."

Furthermore, claim 1 includes specific limitations for displaying the current

cognitive parameter data using the display device. As amended, claim 1 recites "wherein

said current cognitive parameter data is displayed 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." *to obstruct*

Claim 8 clearly recites a practical application – associating the output of a

measurement device with a stored spatial position data of the measurement device in a

display data storage unit of the display device using facial recognitition – and is

integrated into a highly specific computerized system. Specific limitations of detecting

and decoding a QR code representing unit ID data identifying a measurement device is

disclosed. Claim 8, as amended, 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 a said unit ID data of said measurement device." Storing

a spatial position data in a display data storage unit containing the unit ID data when

facial recognition of a measurement device user is successful is disclosed. Claim 8, as

amended, recites "generating a second photographic image data representing said

detected photographic image using said camera; detecting a current pointing angle of said

display device representing a center pointing angle of a current pointing angular range of

a viewing field of an augmented reality display of said display device 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."

Claim 14 clearly recites a practical application – displaying cognitive parameter

data of a user when the user's spatial position data matches a pointing angle of the

display device in the viewing field of the display device – and is integrated into a highly

specific computerized system. Specific limitations of transmitting an EEG signal and unit

ID data identifying the output of the measurement device are disclosed. As amended,

claim 14 recites "transmitting said EEG signal and a unit ID data of stored in said

measurement device using said measurement device, wherein said unit ID data represents

data identifying said measurement device." Claim 14 includes further limitations of

storing a determined current cognitive parameter data in a display data storage unit with a

stored unit ID matching the transmitted unit ID data. As amended, 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." The display data storage unit is also highly

specialized to the present invention. Claim 14, as amended, recites "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

good try overall, but I don't think the Examiner would be convinced

said display device." Claim 14 includes specific limitations for displaying the current cognitive parameter data using the display device. As amended, claim 1 recites "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."

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 1-20 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.

Mullins does not teach a current cognitive parameter data of a user of a measurement device determined from a comparison of the user's EEG signal and a cognitive parameter dataset representing an EEG signal of a cognitive state. Furthermore, Mullins does not teach a quick response (QR) code positioned on a measurement device

that represents unit identification (ID) data identifying the measurement device and a method for decoding the QR code into unit ID data.

Claim 1 includes a current cognitive parameter data of a user of a measurement device determined from a comparison of the user's EEG signal and a cognitive parameter dataset representing an EEG signal of a cognitive state. As amended, claim 1 recites "wherein said cognitive parameter dataset is an EEG signal representing 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."

Claim 8 includes a quick response (QR) code positioned on a measurement device that represents unit identification (ID) data identifying the measurement device and a method for decoding the QR code into unit ID data. As amended, 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 a said unit ID data of said measurement device."

Claim 14 includes a current cognitive parameter data of a user of a measurement device determined from a comparison of the user's EEG signal and a cognitive parameter dataset representing an EEG signal of a cognitive state. As amended,

claim 14 recites "wherein said cognitive parameter dataset is an EEG signal representing 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." *OK!*

Consequently, independent claims 1, 8, and 14 are respectfully submitted to be free of the prior art and allowable, as are their respective dependent claims 2-7, 9-13, and 15-20.

The Applicant now turns to the rejection of claims 1-20 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. Paragraphs [0113-0114] disclose the computer system used in the application with various input-output devices able to interact with the computer system. Mullins discloses input devices used for interaction with the user such as a tactile input device, visual input device, audio input device, or a brain-computer interface. Mullins does not teach a position sensor used to detect pointing angles of a display device used to generate spatial position data. Independent claims 1, 8 and 14 of the present invention all teach a position

sensor used to detect pointing angles of a display device or additionally used to generate spatial position data.

As amended, claim 1 recites "wherein a viewing field of said augmented reality display is a current pointing angular range of said display device including detecting using a position sensor 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." Claim 8, as amended, recites "detecting a current pointing angle of said display device representing a center pointing angle of a current pointing angular range of a viewing field of an augmented reality display of said display device 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." Claim 14, as amended, recites "detecting a plurality of pointing angles in a current pointing angular range in 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."

Consequently, independent claims 1, 8, and 14 are respectfully submitted to be free of the prior art and allowable, as are their respective dependent claims 2-7, 9-13, and 15-20.

The Applicant now turns to the rejection of claims 1-20 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. Hero additionally teaches in paragraph [0115] determining the location at

which the object was last identified. This location is determined based on a location

determination signal received by the location determination signal receiver. Heo does not

teach a position sensor used to detect pointing angles of a display device used to generate

spatial position data. Independent claims 1, 8 and 14 of the present invention all teach a

position sensor used to detect pointing angles of a display device or additionally used to

generate spatial position data.

As amended, claim 1 recites "wherein a viewing field of said augmented reality

display is a current pointing angular range of said display device including detecting

using a position sensor 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."

Claim 8, as amended, recites "detecting a current pointing angle of said display device

representing a center pointing angle of a current pointing angular range of a viewing field

of an augmented reality display of said display device 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." Claim 14, as amended, recites "detecting a plurality of pointing angles in a current pointing angular range in 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."

Consequently, independent claims 1, 8, and 14 are respectfully submitted to be free of the prior art and allowable, as are their respective dependent claims 2-7, 9-13, and 15-20.

Application No. 21/000,000
Attorney Docket No. 944

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,

Date: _____ April 12, 2021 _____

/944/
_____
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