

Title (en)

CLOSED LOOP COMPUTER-BRAIN INTERFACE DEVICE, PHYSIOLOGIC SIGNAL TRANSMITTER AND RECEIVER DEVICE

Title (de)

COMPUTER-HIRN-SCHNITTSTELLENVORRICHTUNG MIT GESCHLOSSENEM REGELKREIS, SENDER UND EMPFÄNGERVORRICHTUNG FÜR PHYSIOLOGISCHE SIGNALE

Title (fr)

INTERFACE CERVEAU-MACHINE À BOUCLE FERMÉE ET ÉMETTEUR-RÉCEPTEUR DE SIGNAL PHYSIOLOGIQUE

Publication

EP 4200008 A1 20230628 (EN)

Application

EP 21766578 A 20210817

Priority

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- DE 102020213417 A 20201023
- EP 2021072784 W 20210817

Abstract (en)

[origin: WO2022038112A1] The present application relates to a closed loop computer brain interface device for an individual comprising a receiver module configured to obtain at least one sensor signal indicative of a movement or action of the individual, a processing module operably connected to the receiver module and configured to determine at least one neuronal feedback signal based at least in part on the obtained sensor signal and a transmitter module operably connected to the processing module and configured to transmit the determined neuronal feedback signal to a neurostimulation device of the individual or a neurostimulation module operably connected to the processing module, wherein the neuronal feedback signal is configured to elicit a sensory percept in the cortex of the individual via stimulating afferent sensory axons of the central nervous system targeting sensory neurons of the cortex of the individual and wherein the elicited sensory percept indicates movement support information related to the obtained sensor signal to support the execution of the movement or action of the individual. The present application also relates to a physiologic signal transmitter device for an individual, comprising a receiver module configured to obtain one or more sensor signals monitoring one or more physiologic and / or mental states of the individual, a processing module operably connected to the receiver module and configured to determine one or more stimulation signals based at least in part on the obtained one or more sensor signals, and a stimulation module operably connected to the processing module and configured to apply the determined stimulation signals to a physiologic system or structure of the individual via a physiologic stimulation device of the individual, wherein the one or more stimulation signals are configured to elicit one or more artificial physiologic excitations propagating along the physiologic system or structure of the individual, and wherein the one or more artificial physiologic excitations encode information about the monitored one or more physiologic and / or mental states of the individual. For instance, artificially elicited neural or muscle excitations may be used to establish a physiologic communication channel between the transmitter and the receiver device.

IPC 8 full level

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CPC (source: EP)

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Citation (search report)

See references of WO 2022038112A1

Designated contracting state (EPC)

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DOCDB simple family (publication)

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