Team Project: Developing and testing a software-based prototype of Neureset - Direct Neurofeedback EEG device

USE CASE 1: USER USES NEURESET DEVICE

Primary Actor: Device user

Stakeholder and Interests:

User - Wants to run a session using the Neureset device to receive treatment

Precondition: The user has placed the 21 electrodes and the headset on their head and has powered on the Neureset device

Success guarantee: The user has successfully received a treatment using the Neureset device

Main success scenario:

1. The user has started a session on the handheld device
2. Over a period of a minute, the Neureset device calculates an initial overall baseline average frequency for all 21 EGG sites, concurrently, at the same time
3. The Neureset device reads a signal from 1 of the 21 EGG sites on the headset
4. Over a period of a minute, the Neureset device creates a baseline average frequency using that 1 signal
5. The Neureset turns on a green light that flashes, indicating that the treatment is being delivered
6. In a single second, the Neureset adds an offset frequency of 5hz to the baseline average frequency every 1/16th of a second
7. The Neureset then recalculates the baseline average frequency
8. The Neureset adds another offset frequency of 5hz and repeats the process every 1/16th of a second for the duration of that single second.
9. The Neureset turns off the green light after that second, indicating that the treatment has stopped
10. The Neureset proceeds to choose the next EGG site and repeats steps 3-9
11. The Neureset continues to reapply those steps until all 21 EGG sites have been activated
12. Over a period of a minute, the Neureset device calculates another overall baseline average frequency for all 21 EGG sites, concurrently, at the same time

Extensions:

USE CASE 2: NEW SESSION MENU OPTION

Primary Actor: Device user

Stakeholder and Interests:

User - Initiates a new Neurofeedback session using the Neureset device

Precondition: Neureset device is powered on and EEG headset is correctly positioned

Success guarantee: The user has successfully started a new session

Main success scenario:

1. User selects the “New Session” option from the Neureset device menu
2. Once contact with EEG electrodes is established, the Neureset device turns on a blue light
3. The Neureset device starts a timer
4. Go to UC-1 (User uses neureset device)

Extensions:

2a. If contact is lost the red light flashes, the session pauses and the Neureset device starts beeping

2a1. Reestablish contact with the device

USE CASE 3: SESSION LOG MENU OPTION

Primary Actor: Device user

Stakeholder and Interests:

User - Wants to display the session log history of the Neureset device

Precondition: The Neureset device is powered on

Success guarantee: The user can successfully see the session log history of the Neureset device

Main success scenario:

1. The user selects the “Session Log” option from the Neureset device menu
2. The Neureset device displays the time and date of the previous sessions
3. The user can scroll through the different sessions on the device
4. The user can upload the Neureset device data to a PC
5. On the PC, the user can also see the before and after baseline average frequencies of each EGG site, taken during the overall baselines at the beginning and end of the session, compared side by side as a numerical value

Extensions:

**** Should we make a Use Case for the PC????? Idk lol just something to think about

**** In the meantime i am just gonna say PC can see more details in Use Case 3

**** Step 5 seems iffy

USE CASE 4: DATE AND TIME MENU OPTION

Primary Actor: Device user

Stakeholder and Interests:

User - Wants to modify the date and time setting on the Neureset device

Precondition: The Neureset device is powered on

Success guarantee: The user can successfully change the date and time on the Neureset device

Main success scenario:

1. The user selects the “Date and Time” option from the Neureset device menu
2. The user can change the date of the Neureset device by inputting a new date
3. The user can change the time of the Neureset device by inputting a new time

Extensions:

*** We will have to modify step 2 and 3 according to how we implement the GUI for the device (ex: scroll until a specific date/time is selected kinda like a microwave/stove, manually enter them, etc…)

USE CASE #:
Primary Actor:
Stakeholder and Interests:
Precondition:
Success guarantee:
Main success scenario:
Extensions: