Use Case 1
Name: normal operation of treatment with Neureset device

Primary Actor(s): Patients, Users

Stakeholders and Interests:
Patients: Need successful treatment by Neurofeedback therapy.
Users: Simulate the Neurofeedback therapy using a reliable Neureset device.

Precondition(s): Neureset device has normal operation, and with exception/safety handling functions.

Success guarantee(s) (equivalently Post-conditions): Neureset device performed complete treatment for Patients successfully.

Main success scenario:
1. Patients wear the EEG electrodes cap which contains 21 standard electrode sites.
2. Users place a sensor to obtain an EEG signal from the Patients.
3. Users turn on the Neureset device, press the "new session" option in the menu.
4. Users first calculate the overall baseline for all 21 EEG sites.
5. The device screen displays a timer showing the approximate time remaining and session progress bar indicated by a percentage, then indicated by the blue light on the device.
6. The LENS software analyzes the EEG signal and establishes a baseline to calculate the baseline/dominant average frequency for 1 minute.
7. Proceed to the treatment process when the baseline frequency arrived at treatment frequency.
8. An offset frequency of 5hz is added to the baseline frequency for 1/16 second and brainwave frequency is measured again, and the green light flashes during the rapid 1 second.
9. An offset frequency is added to the new brainwave signal and repeats this process for the remaining 15/16 second.
10. First site completes treatment after 1 second, the therapist repeats this treatment process, which is establishing the baseline frequency for one minute and then applying the rapid 1 second treatment until all 21 sites receive treatments.
11. Users calculate the overall baseline for all 21 EEG sites after treatment complete.
12. The before and after baselines frequency, time, and date of this session are stored in the PC.
13. Users turned off the Neureset device.

Extensions:
4. The contact between the 21 electrode sites and the Neureset device is lost:
   4a. Device red light flashes, the session is paused and the device starts beeping until contact is reestablished. If contact is not reestablished after 5 minutes, the device turns off automatically and the session is erased.

7. The user press pause voluntarily during the session but not reestablished the session in 5 minutes:

      7a: The session is terminated and the device turns off automatically.

    10. The battery of Neureset device is low:

      10a: The right light in the device flashes to notify users that the device battery is low.

Use Case 2
Name: Therapy history viewing with PC
Primary Actor(s): Users

Stakeholders and Interests:
Users: Watch the Neureset device therapy history on PC.

Precondition(s): Neureset device has normal operation, the PC can check the therapy history information normally.

Success guarantee(s) (equivalently Post-conditions): Neureset device had one or more treatments histories, the PC shows all the therapy histories information successfully.

Main success scenario:
1. Users have completed many treatments with the Neureset device.
2. In the menu Neureset device, users choose the "SESSION LOG" option.
3. The Neureset device only shows the time and data of previous sessions.
4. Users open the Neureset software on PC and check the Therapy history.
5. The Therapy history on PC shows the date and time of previous sessions.
6. The Therapy history on PC then shows the previous sessions' before and after dominant average frequencies for each EEG site during the overall baselines at the beginning and end of the session, compared side by side as a numerical value.
7. Users close the Neureset software on PC.
8. Users close the Neureset device.

Extensions:
    2. The Neureset device shows "no previous sessions detect" about "SESSION LOG" option:

      2a. The Neureset device doesn't have any previous therapy sessions.

    4. Users open the Neureset software on PC failed:

      4a.Users open the Neureset software on PC again as administrator.