

Use Case 1: System Initialization

Primary Actor: Device Operator

Level: User interaction with Device

Stakeholders and Interests:

Device Operator: Expects a functioning, easy to use device for LENS treatment

Device Manufacturer: Expects a reliable and safe device for LENS treatment

Precondition: Device is in working condition and receiving sufficient power.

Success Guarantees: Device is operational for future use cases.

Main Success Scenario:

1. Device Operator presses "ON" button
2. Device checks battery status and updates battery display
3. Device checks for EEG headset insertion. Blue light on when connected.

Extensions:

2a. Battery is critically low

2a1. No further actions allowed without change in battery.

3a. No EEG is detected.

3a1. Prompt the user to connect the headset. No blue light for CONTACT.

Use Case 2: LENS Session

Primary Actor: Device Operator

Level: User interaction with Device

Stakeholders and Interests:

Device Operator: Expects a functioning, easy to use device for LENS treatment

Device Manufacturer: Expects a reliable and safe device for LENS treatment

Precondition: Device has been properly initiated and connected to patient

Success Guarantees: Patient has been properly treated and results have been logged

Trigger: New session button is pressed

Main Success Scenario:

1. Device displays timer approximate time remaining for the duration of the session
2. Over the first minute, establish baseline EEG over all 21 EEG sites simultaneously (7 done in demo; 2.5secs for establishment).
3. The device starts the EEG session at one site, with the green light flashing during the 1 second of treatment at each site, moving from one site to another until all 21 EEG sites are visited and treatment is performed.
4. At the end of the session, the device calculates the final baseline for all 21 EEG sites
5. Logs therapy session information, including date and time, into a file or database

Extensions:

- 2-4a. Contact is lost in the middle of the session
 - 2-4a1. A red light flashes, the session pauses, and device beeps
 - 2-4a2. If disconnected for longer than 5 minutes, the device turns off and the session is erased
- 2-4b. User presses the pause button.
 - 2-4b1. The session pauses and the timer stops until the user presses resume
 - 2-4b2. If the pause duration is longer than 5 minutes, the device turns off and the session is erased.
- *a. Battery runs low during usage
 - *a1. Update battery indicator light to be on

Use Case 3: Navigating Therapy History

Primary Actor: Device Operator

Level: User interaction with Device

Stakeholders and Interests:

Device Operator: Expects a functioning, easy to use device for data retention and retrieval


Device Manufacturer: Expects a reliable and safe device for persistent data storage

Precondition: Device has at least one successfully completed LENS session; PC connects to device with no issues; database connects correctly

Success Guarantees: Treatment logs are accurately displayed for requested session

Trigger:

Main Success Scenario:

1. Scroll to "SESSION LOG" using arrow keys
2. Enter screen by pressing  button
3. Screen will display all successfully completed sessions with date/time

Variation (PC UI):

- *. Click on "Open PC UI" in the dev panel