**Use Case 1:** User Turns Machine On

**Primary Actors:** CES User

**Stakeholders:**

Raven Microcurrent Biofeedback Inc. (RMB)

Device Programmers

User

**Precondition:** Oasis Pro has at least 2 bars of battery

**Minimal Guarantee:**

* Device starts up and displays error message in case of insufficient battery

**Success Guarantee:**

* Device User starts the machine and can navigate start menu

**Trigger:** None

**Main Success Scenario:**

1. User presses the power button
2. Light above power button switches to yellow
3. Battery level flashes on the power bar every 30s
4. User can begin choosing therapy settings

**Use Case 2:** Battery Level Low during Session

**Primary Actors:** CES User

**Stakeholders:**

Raven Microcurrent Biofeedback Inc. (RMB)

Device Programmers

User

**Precondition:**

* User has CES device turned on
* Battery level is at three (3) bars

**Minimal Guarantee:**

* Device will warn user of low battery level
* Program exits safely

**Success Guarantee:**

* Session is paused and recorded
* User is informed of depleted battery level
* Program exits safely

**Trigger:** Battery level falls under required minimum during a user’s session

**Main Success Scenario:**

1. Battery indicator displays one (1) bar
2. Current session ends
3. User data is recorded
4. Message is displayed informing user that the battery must be recharged
5. Device shuts down

**Extensions:**

**Use Case 3:** User Selects a Session

**Primary Actors:** CES User

**Stakeholders:**

Raven Microcurrent Biofeedback Inc. (RMB)

Device Programmers

User

**Precondition:**

* User has CES device turned on
* Battery level sufficient for selected session

**Minimal Guarantee:**

* User will be able to select settings for session
* Program will simulate session being run and handle any errors encountered

**Success Guarantee:**

* Program will simulate selected session for the user and record activity on user profile

**Trigger:** NONE

**Main Success Scenario:**

1. User uses session time ‘Next’ button to choose either 20, 45 or enter custom time in box
2. User selects “20min”
3. User uses session type ‘Next’ button to choose from session types
4. User selects “Alpha”
5. User uses session user ‘Next’ button on side panel to select which of the 3 registered users the session is for
6. User presses green check mark to begin session
7. Device makes sure the “on ears” checkbox is checked (check use case 4)
8. Program checks that battery level is sufficient
9. If “Record” checkbox is checked, session info is recorded
10. Session begins and timer is displayed

**Use Case 4**: **Connection test**  
**Primary Actor**: CES Device User

**Scope:** Medical facility/ Therapeutic Intervention  
**Level**: Summary  
**Stakeholders and Interests**:

Raven Microcurrent Biofeedback Inc. (RMB)

Device Programmers

User

**Precondition**: Device is turned on, session settings have been selects (check use case 3)

**Success guarantees:** Session will not operate unless device is connected to user’s earlobes

**Trigger**: NONE  
**Main success scenario:**

1. User checks the “On Ears” checkbox
2. User begins session by pressing green check mark
3. Device makes sure the “On Ears” checkbox is checked
4. Session begins

**Extensions:**

1. If the ear clips disconnect, the session will be paused and wait for them to be reclipped
   1. No connection (7 and 8 on display) will be displayed for a couple seconds
      1. Display of the connection status will update to show that the voltage is back to normal.
      2. Left or right ear symbol may turn on to show which ear needs better connectivity

**Use Case 5**: **Intensity**  
**Primary Actor:** CES Device User/Operating Medical Worker

**Scope:** CES Device Session  
**Level:** Summary  
**Stakeholders and Interests**:

Device Programmers

User

Medical Unit

**Precondition:** Device is turned on and electrodes are on ear  
**Minimal guarantees:** Stimulus intensity will increase or decrease

**Success guarantees**: Stimulus will be at desired level/intensity

**Trigger:** pressing the INT ▼ button or INT▲ button  
**Main success scenario:**

1. Press INT ▼ button to decrease stimulus intensity
   1. Graph display shows what level of intensity is currently being exerted (1-8)
2. Press INT ▲ button to increase stimulus intensity
   1. Graph display shows what level of intensity is currently being exerted (1-8)

**Extensions:**

1. Intensity level is too low and no effects are felt
   1. If that is the case increase the intensity level
2. Intensity level is too high
   1. Could result in skin irritation
   2. Decrease the level to sub-threshold levels (just below the ability to feel the stimulus)

**Use Case 6**: **User Records a Session**  
**Primary Actor:** CES Device User

**Scope:** Patient records  
**Level:** Summary  
**Stakeholders and Interests:**

Raven Microcurrent Biofeedback Inc. (RMB)

Device Programmers

User **Minimal guarantees:** Device will store therapy

**Success guarantees:** Therapy is recorded and includes session type, duration, and intensity level

**Trigger:** Starting a session with the “record” option  
**Main success scenario:**

1. User selects record option
2. User starts a therapy session
3. Data is stored
   1. Session type is recorded
   2. Duration is recorded
   3. Last intensity level is recorded
4. Recorded treatment appears on the side panel after session is over
5. User can select saved replays from his/her users’ saved replays

**Use Case 7**: **User** **Replays a Stored Treatment**  
**Primary Actor:** CES Device User

**Scope:** Patient records  
**Level:** Summary  
**Stakeholders and Interests:**

Raven Microcurrent Biofeedback Inc. (RMB)

Device Programmers

User

**Precondition:** Pre-existing record of therapy session  
**Minimal guarantees:** Session with the configured information will start

**Success guarantees:** Session of previously recorded therapy begins  
**Main success scenario:**

1. User selects custom recorded session from side panel
2. User presses “Replay Therapy” Button
3. Therapy session starts with saved settings

**Traceability Matrix**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ID | Requirement | Use Case # | Fulfilled by | Tested | Description |
| 1 | Power: “Turn On/Turn Off” and “Ending A Session” as described on p4 of the manual. | #1 |  |  |  |
| 2 | Battery level: battery level and battery low warnings as per “Battery Level” section on p5 of the manual. Your simulation should handle battery depletion as a function of length of therapy, intensity, and connection to skin. | #2 |  |  |  |
| 3 | Selecting a session: as per “Selecting A Session” on p5 of the manual but only with 3 groups (20min, 45min and user designated) and 4 session types per group. You can choose any 4 types from p12 of the manual | #3 |  |  |  |
| 4 | Connection test: as per “Connection Test” on p6 of the manual. | #4 |  |  |  |
| 5 | Intensity: as per “Adjusting Intensity” on p7 of the manual | #5 |  |  |  |
| 6 | Record: users can choose to record a therapy and add to treatment history. Therapy session information to be recorded: session type, duration and intensity level (if changed during therapy choose last selected intensity level). There would be additional interface needed beyond what Oasis Pro offers to implement this feature, and it is up to you design it. | #6 |  |  |  |
| 7 | Replay: users can replay selected treatments from history of treatments. | #7 |  |  |  |