**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 and holds the power button
2. LED power button flashes on
3. Battery level is displayed on screen
4. User can choose to navigate to the therapy menu to choose a session (Use case 3)

**Extensions:**

**2a.** If battery levels are not sufficient, CES device will turn on briefly, display an error message requesting user to charge device and power off again.

**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 navigate to sessions menu and select desired 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 navigates to “Select a Session” menu
2. Menu displays 3 options to the user (20min, 45min, CUSTOM)
3. User selects “20min”
4. “Select a Session Type” menu is displayed with 4 options (Alpha, Beta, SMR, 100 HZ)
5. User selects “Alpha”
6. Session information is recorded
7. Device adjusts session settings (intensity, time)
8. Program checks that battery level is sufficient
9. Session begins

**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 and user wants to use it  
**Minimal** **guarantees**: Device will relay connection status

**Success guarantee**s: Session can be run

**Trigger**: Starting a session  
**Main success scenario:**

1. Select the mode of the CES
   1. Pick Short-Pulse CES Session
   2. Pick 50% Duty Cycle CES Session
2. The graph will display the status of the connection
   1. 8 and 7 will be blinking if no connection is found
   2. 6, 5 and 4 will be display if it is an Okay connection
   3. 3, 2 and 1 if it is an excellent connection
3. The display will go blank or display a Soft On animation (resuming or restoring a saved preference

**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 results are generated
   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. User can see the treatment history on an interface

**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
2. Therapy session starts

**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 |  |  |  |