

Use Cases

Use Case 1: Main Use Case

Main Actor: User

Secondary Actor: The Device

Pre-condition: device battery is not empty, user has the required equipment (ear lobe)

Success Guarantee: User receives treatment and device shuts down

Main scenario:

1. User connects the ear plugs to the AID and installs them on their ears
2. User presses the "On" button
3. User sets the timer to their desired time (see Use case 2)
4. The User can choose their desired current (see Use case 3)
5. The user can adjust the lock settings (see Use Case 4)
6. The User receives their treatment
7. The Device power-off automatically

Extensions:

- 1.a. If the the connection is lost for more than 5 seconds, the device resets
- 1-6.a. At any time, if the current goes over 700 microAmps, the device shuts down.

Use Case 2: Set Timer

Main Actor: User

Secondary Actor: The Device

Scope: CES Device Service

Level: User goal

Pre-condition: Battery is not empty, Device is on

Success Guarantee: The User can see the time they selected on the screen of the device

Main success scenario:

1. Timer sets to 60 by default
2. The user presses the timer button to cycle through time options for the therapy session.
3. The device sets the selected time by the user

Extensions:

3a. If the device is running a therapy, and it has the lock settings turned on, the device doesn't change the time.

Use Case 3: Set Current

Main Actor: User

Secondary Actor: The Device

Scope: CES Device Service

Level: User goal

Pre-condition: Battery is not empty, Device is on , mode button is set to current

Success Guarantee: The User can see the current they selected on the screen of the device

Main success scenario:

1. When turned on, the device sets the current to 100 micro amps
2. The user presses the arrow buttons to change the value of the current
3. The device sets the current selected by the user

Extensions:

3a. If the device is running a therapy, and it has the lock settings turned on, the device doesn't change the current.

Use Case 4: Set Lock

Main Actor: User

Secondary Actor: The device

Scope: CES Device Service

Level: User goal

Pre-condition: Battery is not empty, Device is on.

Success Guarantee: The user can see the lock light on the device.

Main success scenario:

1. The user presses the lock button twice within 5 seconds.
2. The device locks itself.

Variations:

1'. If the device is already locked, the user can press the lock button twice to unlock the device.

2'. The device unlocks itself

Use Case 5: Save Recording

Main Actor: User

Secondary Actor: The device

Scope: CES Device Service

Level: User goal

Pre-condition: Battery is not empty, Device is on.

Success Guarantee: The user can see the treatment added to their history.

Main success scenario:

1. User presses the button to record their therapy.
2. Device adds the therapy to history once the therapy is done.

Use Case 6: Load Recording

Main Actor: User

Secondary Actor: The device

Scope: CES Device Service

Level: User goal

Pre-condition: Battery is not empty, Device is on.

Success Guarantee: The device starts with the selected recording.

Main success scenario:

1. The user presses the load button on the device.
2. A list of recordings is displayed
3. User uses the arrow keys to scroll through the recordings.
4. User presses the load button to select the recording they want.
5. The recording is loaded into the device

Variation:

2-5.a. The user chooses the cancel option, and the device goes back to its default menu/status.

Extensions:

- 1.a. If the device is running a therapy, the device doesn't go to the load menu

Use Case 7: Set Frequency

Main Actor: User

Secondary Actor: The Device

Scope: CES Device Service

Level: User goal

Pre-condition: Battery is not empty, Device is on

Success Guarantee: The User can see the frequency they selected on the screen of the device

Main success scenario:

1. When turned on, the device sets the frequency to 0.5hz
2. The user presses the frequency button to change the frequency.
3. The device sets the frequency selected by the user

Extensions:

3a. If the device is running a therapy, and it has the lock settings turned on, the device doesn't change the frequency.

Use Case 8: Set Waveform

Main Actor: User

Secondary Actor: The Device

Scope: CES Device Service

Level: User goal

Pre-condition: Device is on.

Success Guarantee: Waveform is set successfully and shows on the screen.

Main success scenario:

1. When turned on, the device sets the waveform to alpha.
2. The user presses the waveform button to change the waveform.
3. The device sets the waveform selected by the user

Extensions:

3.a. If the device is running a therapy, and it has the lock settings turned on, the device doesn't change the waveform.

Use Case 9: Handle Low Battery

Main Actor: The Device

Secondary Actor: The User

Scope: CES Device Service

Level: Sub function

Trigger: battery gets below 5%

Success Guarantee: Device switches off.

Main success scenario:

1. Audio Warning is sent out to inform the user that the batteries are low
2. The user replaces the batteries with new ones

Extension:

- 2a. If the battery reaches a critical state of 2%, the device shuts down.

Use Case Diagram:

