

# COMP 3004 A3

## USE CASE 1: TURN ON THE DEVICE

Actor(s): User

Precondition:

- The user owns the device.
- The device is turned off.
- The device is functional (it is not broken or damaged beyond functioning capability).

Postcondition: Device is turned on and the screen, buttons and breath pacer are visible.

Main Success Scenario:

1. The user presses the on/off button on the device.
2. The device turns on.
3. The screen, buttons and breath pacer are now visible.

Extensions:

- 1a. There is insufficient charge in the device, resulting in the device not being turned on.
  - 1a1. The user inserts batteries into the device and the charge goes back to 100%.

## USE CASE 2: TURN OFF THE DEVICE

Actor(s): User

Precondition: Device is turned on

Postcondition: Device is turned off and is no longer consuming any power.

Main Success Scenario:

1. User presses the on/off button on the device
2. The device powers down the screen and breath pacer.
3. The device turns off.

## USE CASE 3: INITIATE AND COMPLETE A SESSION

Actor(s): User

Pre-condition(s): The device is turned off AND the User owns the device.

Post-condition: The session summary view is displayed to the user.

Main Success Scenario:

1. The user turns on the device.
2. The user uses the up button to select the "Start Session" pushbutton.
3. The "active pulse reading light" turns on.

4. The screen changes to display the HRV graph with current coherence score(numerical value), length(duration of session), and achievement(total sum of coherence scores sampled every 5 seconds).
5. The coherence level light turns on, indicating low, medium or high coherence with red, blue or green light. The default challenge level is used.
6. The breath pacer appears on screen, and begins oscillations.
7. The breath pacer increases the breath interval continuously over 30 seconds.
8. The user presses the center select button, ending the session.
9. The challenge level light turns off.
10. The session summary view is displayed on screen, showing challenge level, time percentage at different coherence levels, average coherence, length of session, achievement score, and the complete HRV graph.

Extensions:

- 1a. There is insufficient charge in the device, resulting in the device staying off.
  - 1a1. The user inserts batteries into the device and the charge goes back to 100%.
- 3a. User disconnects the sensor from their skin and device is unable to read
  - 3a1. User places the device back on their skin and device reconnects

## **USE CASE 4: VIEWING LOGGED SESSION**

Actor(s): User

Precondition: Device is turned on

Postcondition: Device is displaying data from previous session

Main Success Scenario

1. User presses Menu button on device
2. User uses directional buttons to select History
3. User presses center selector to go to History tab
4. User uses directional buttons to select a logged session
5. Device displays date and summary of session

## **USE CASE 5: DELETING LOGGED SESSION**

Actor(s): User

Precondition: Device is turned on and session is logged

Postcondition: Device history log does not show deleted session

Main Success Scenario

1. User presses Menu button on device
2. User uses directional buttons to select History
3. User presses center selector to go to History tab

4. User uses directional buttons to select a logged session
5. User uses the right direction button to select the deletion option
6. User presses center selector to delete the session

## **USE CASE 6: MODIFYING BREATH PACER SETTINGS**

Actor(s): User

Pre-condition(s): Device is newly reset AND The device is turned off.

Post-condition: The breath pacer's characteristics will be different in the next session.

Main Success Scenario:

1. The User turns the device on.
2. The User presses the menu button on the device.
3. The User presses the directional buttons to go to the "Settings" pushbutton.
4. The User presses the center selector on "Settings".
5. The User presses the directional buttons to go to the "Breath Pacer Settings" pushbutton.
6. The User presses the center selector on "Breath Pacer Settings".
7. The User presses the left and right directional buttons to achieve a change in interval.
8. The User presses the Menu button.

Extensions:

- 1a. There is insufficient charge in the device, resulting in the device staying off.
  - 1a1. The user inserts batteries into the device and the charge goes back to 100%.

## **USE CASE 7: MODIFYING CHALLENGE LEVELS**

Actor(s): User

Precondition:

- The user owns the device.
- The device is turned on
- The user is currently on the default challenge level, "1".

Postcondition: The challenge level of the device changes and the corresponding threshold for the levels of coherence changes.

Main Success Scenario:

1. The user presses the menu button on the device.
2. The user presses the directional buttons to go to the "Settings" tab.
3. The user presses the center selector
4. The user presses the directional buttons to go to the "Challenge Level Settings" tab.
5. The user presses the center selector
6. The user presses the directional buttons to select the "2" challenge level.

7. The user presses the center selector
8. The device changes the internal challenge level to the 2nd challenge level.
9. The lights on top of the device indicating the coherence level adjust to the new coherence level thresholds.

Extensions:

- 1a. There is insufficient charge in the device, resulting in the device being turned off.
  - 1a1. The user inserts batteries into the device and the charge goes back to 100%.
- 6a. The user presses the directional buttons to select the “1” challenge level.
  - 6a1. The device changes the internal challenge level to the 1st challenge level.
  - 6a2. The lights on top of the device indicating the coherence level adjust to the new coherence level thresholds
- 6b. The user presses the directional buttons to select the “3” challenge level.
  - 6b1. The device changes the internal challenge level to the 3rd challenge level.
  - 6b2. The lights on top of the device indicating the coherence level adjust to the new coherence level thresholds
- 6c. The user presses the directional buttons to select the “4” challenge level.
  - 6c1. The device changes the internal challenge level to the 4th challenge level.
  - 6c2. The lights on top of the device indicating the coherence level adjust to the new coherence level thresholds

## **USE CASE 8: RESETTNG DEVICE**

Actor(s): User

Precondition: Device is turned on

Postcondition: Device restored to default settings and data wiped

Main Success Scenario:

1. User presses Menu button on device
2. User uses directional buttons to select Settings
3. User presses center selector to go to Settings
4. User uses directional buttons to select Reset Device
5. User presses center selector
6. Device erases all logged sessions
7. Device resets itself to default settings
8. Device redirects user to Main screen