

# HeartWave Device Use Cases

## Use Case 1: Individual Monitoring Session

Primary Actor(s): User, Device Control System (DCS)

Secondary Actor(s): Data Storage

Preconditions:

1. Successful booting of device.
2. Enough battery for session.
3. Device secured on user.

Success Guarantee:

Device control system starts and ends session at user's request, according to their configurations and saves the session information to the data store. Once the session ends the user sees a session summary screen with data gathered from the session.

Main Success Scenario:

1. Menu options are displayed as default on the device screen, and the user initiates a session by pressing on the selector button.
2. Screen displays the main HRV graph with key metrics.
3. A machine LED light (representing coherence challenge level) and symbol turn on to indicate active pulse reading.
4. Device begins pulse reading.
5. Session screen displays the main HRV graph.
6. Session screen updates key metrics (coherence score, session length, achievement).
7. An LED light changes to red, blue or green to indicate coherence level.
8. Session screen displays a breath pacer according to breath pacer settings.
9. Session screen is updated in real time according to incoming biofeedback.
10. When a new coherence level is reached the user is alerted.
11. User ends the session by pressing on the selector button.
12. Session information is stored in the data store.
13. Session summary is displayed on the main screen with key data from the session.

Extensions:

1. If the sensor is disconnected then an error message would be displayed on the screen indicating that the sensor is no longer receiving data. The session will end. Then there would be a prompt to allow the user to re-establish a connection with the sensor for another session.

2. If the battery is low a warning message will be shown on the screen. If the battery dies the session is stopped and the data that was collected is saved. The device would then turn off.

## Use Case 2: View Session Data

Primary Actor(s): User, Data Storage

Secondary Actor(s): Remote data store

Preconditions:

1. At least one instance of a successful individual monitoring session (use case 1).
2. The HeartWave device user interface has an accessible history/log tab.
3. The HeartWave device is turned on.

Success Guarantee

Users are able to view the history of all sessions, with dates. Users are able to select a specific session to see its summary view as well as delete it.

Main Success Scenario

1. User opens the menu.
2. User navigates to the "Session Log" tab by pressing on the selector button.
3. Session logs are displayed on the main screen.
4. User selects a specific log to view with the arrow and selector buttons.
5. Summary of selected log is displayed on the screen, as well as the delete button for that log.

Extensions

1. User presses and deletes the log button.
  - a. User is prompted for confirmation.
  - b. Log is removed from log history and no longer visible to the user.

## Use Case 3: Device Configuration

Primary Actor(s): User

Preconditions:

1. The HeartWave device has an LED light that changes colour indicating different levels of coherence, depending on the challenge level.
2. The HeartWave device user interface has an accessible settings tab that includes challenge level and breath pacer settings.
3. The HeartWave device is turned on.

### Success Guarantee

Users are able to configure the device's coherence challenge level, breath pacer settings, and do a device "factory reset" as they wish, and any changes are effective immediately.

### Main Success Scenario

1. User navigates to the device's "Settings" tab by pressing on selector
2. The user is able to toggle the breath pacer, change the breath pacer interval, and/or reset the device given the touch screen on the device display.
3. Respective changes are effective immediately.

### Extensions

1. Breath pacer is toggled:
  - a. If the breath pacer was previously on, it will now no longer appear on the machine's session screen.
  - b. If the breath pacer was previously off, a breath pacer in the form of a strip of lights will now appear on the machine's session screen, at a default of 1 breath every 10 seconds.
2. Breath pacer interval is changed:
  - a. Breath pacer interval will be changed to whichever number of seconds between 1-30 that the user chooses (default is 10 seconds).
3. Device reset button is pressed:
  - a. All data is wiped and the device is restored to the initial install condition.