

Use Case 1: HeartWave

Prime Actor: User

Stakeholders and Interests:

User - Check physical condition with a HeartWave device.

Producer – The device can help users, so that themselves can have a good reputation.

Precondition: The mechanical part of the device works well, and it has enough battery.

Success Guarantee: Users can use the device to check their current physical condition and can compare their current condition to historical ones.

Main Success Scenario:

1. Power on or off the device.
2. Set the breath pacer and challenge level according to the user's physical condition.
3. Start a new session.
4. Breath according to the suggested breath pacer (optional).
5. End the session.
6. Check the displayed data, and compare the current one with historical data.
7. Delete selected data or wipe out all data.
8. Charge the Device

Use Case 2: Power ON or OFF the Device

Prime Actor: User

Stakeholders and Interests:

User - Check physical condition with a HeartWave device.

Producer – The device can help users, so that themselves can have a good reputation.

Precondition: The battery is enough for the device to be powered on, and the “ON/OFF” button works well.

Success Guarantee: The user can turn on or off the device.

Main Success Scenario:

1. Press the ON/OFF button to power on if the device is currently powered off.
2. The screen will light up and start displaying the menu after powering on, and buttons will be activated.
3. Press the ON/OFF button to power off if the device is currently powered on.
4. When the device is turned off, the screen goes off and the buttons (except the ON/OFF button) will not work.

Use Case 3: Set the Breath Pacer

Prime Actor: User

Stakeholders and Interests: The user can set the time between breathing from 1s to 30s.

User - Check physical condition with a HeartWave device.

Producer – The device can help users, so that themselves can have a good reputation.

Precondition: The battery is still enough, and the arrow buttons and the screen work well.

Success Guarantee:

Main Success Scenario:

1. Use the UP and DOWN buttons to navigate to the breath pacer setting of the SETTING option.
2. Use the SELECT button to start setting the breath pacer.
3. Use arrow buttons to change the time between each breath, between 1 to 30 seconds.

Use Case 4: Set the Challenge Level of Coherence

Prime Actor: User

Stakeholders and Interests:

User - Check physical condition with a HeartWave device.

Producer – The device can help users, so that themselves can have a good reputation.

Precondition: The battery is still enough, and the arrow buttons and the screen work well.

Success Guarantee: The user can choose different coherence challenge levels.

Main Success Scenario:

1. Use the UP and DOWN buttons to navigate to the challenge level setting of the SETTING option.
2. Use the SELECT button to start setting the challenge level.
- 3.. Use arrow buttons to change the challenge level, one of the following three: low, medium, and high.

Use Case 5: Start New Session

Prime Actor: User

Stakeholders and Interests:

User - Check physical condition with a HeartWave device.

Producer – The device can help users, so that themselves can have a good reputation.

Precondition: The battery is still enough, and the arrow buttons and the screen work well.

Success Guarantee: New session with specific breath pacer and challenge level starts.

Main Success Scenario:

1. Navigate to the “start new session” option of the menu.
2. Use the SELECT button to start a new session.
3. The LED light will light up automatically according to the challenge level user choose.
4. A beep goes off when a new coherence level is reached.

Use Case 6: End a Session

Prime Actor: User

Stakeholders and Interests:

User - Check physical condition with a HeartWave device.

Producer – The device can help users, so that themselves can have a good reputation.

Precondition: The battery is still enough, and the arrow buttons and the screen work well.

Success Guarantee: The session ends, and a summary is generated and stored in the device.

Main Success Scenario:

1. Press the “MENU” button to display the menu.
2. The “start new session” option will change to “end session” after a new session starts, navigate to this option.
3. Press the SELECT button to end the session.
4. The session summary, including challenge level, percentage of time in different coherence levels (low medium, and high), average coherence, length of session, achievement score, and the entire HRV graph will be displayed.
5. The summary will be stored in the device automatically.

Use Case 7: Check, Delete, and Wipeout Historical Data

Prime Actor: User

Stakeholders and Interests:

User - Check physical condition with a HeartWave device.

Producer – The device can help users, so that themselves can have a good reputation.

Precondition: The battery is still enough, and the arrow buttons and the screen work well.

Success Guarantee: Specific data is deleted from the device, or the entire device is reset wiping out all stored data.

Main Success Scenario:

1. Navigate to and select the “log/history” option of the menu.
2. All historical data will be displayed as a list; the name of each data is the date when the data is generated.
3. Use the SELECT button to select specific data, once selected, that summary data will be displayed on the screen.
4. Use the arrow buttons to navigate to the “delete” option, and press “select” to delete the specific data.
5. Use the arrow buttons to navigate to the “reset” option, and press SELECT to wipe out all the data in this device.

Use Case 8: Charge the Device

Prime Actor: User

Stakeholders and Interests:

User – Charge the device.

Precondition: The charger and the device work well.

Success Guarantee: The battery is fully charged, and the device will stop charging automatically when the battery is full.

Main Success Scenario:

1. The device starts charging if the battery is not full.
2. The device stops charging automatically when the battery is full.
3. A warning message will be displayed if the user charges the device when the battery is full.