AltumView Systems Inc.

Sentinare Smart Activity Sensor

User Manual

Mar. 24, 2022

Contents

Revision History 5

1. Installation and General Information 8

1.1 Introduction 8

1.2 Installing iOS App from Apple App Store 9

1.3 Installing Android App 9

1.4 Installing the Sentinare Sensor 10

1.5 Disclaimers, Limitations and Known Issues 11

1.6 Troubleshooting 12

1.6.1 Known Issues 12

1.6.2 Other Troubleshooting 13

1.7 Technical Support 15

1.8 Certificates 15

1.9. Federal Communications Commission (FCC) Interference Statement 15

1.10 Innovation, Science and Economic Development Canada (ISED) Interference Statement 16

2. User Account Management 17

2.1. Signing Up 17

2.2 Login 19

3. Room Management 21

3.1 List of Rooms 21

4. Device Management 23

4.1 Add a Device 24

4.1.1 Add a Device 24

4.1.2 Set Up WiFi 26

4.1.3 Upgrade Firmware 29

4.1.4 Calibration 31

4.1.5 Other Important Settings 33

4.2 Device Streaming and Setting 34

4.2.1 Rename Device 35

4.2.2 Refresh Display 35

4.2.3 Voice Call 35

4.2.4 Setup WiFi 35
4.2.5 Calibration 36
4.2.6 Region of Interest (ROI) 36
4.2.7 View Recordings 38
4.2.8 Updating Firmware 39
4.2.9 Restart 39
4.2.10 Change Room 39
4.2.11 Remove Device 40
4.2.12 Privacy Mode 41
4.2.13 Upside-Down Installation 41
4.2.14 Delay Fall Alert 41
4.2.15 Hand Waving Detection and Sensitivity 42
4.2.16 Advanced Settings 42
4.2.17 Factory Reset 43
4.2.18 Configuring Night Vision 45
4.2.19 LED Green Light 45
4.2.20 Alert Sound 45
4.2.21 Stick Figure Recording 46
4.2.22 HDMI Output (Cypress Only) 46
4.2.23 Local Video Recording (Cypress Only) 47
4.2.24 Meanings of LED Colors 47
5. People Management 48
5.1. Manage Person Groups 48
5.2. Add Person 49
5.3 Person Information 51
6. Alerts 54
6.1 Alerts 54
6.2 Managing False Alarms 55
7. Fall Risk Assessment 57
7.1 Introduction 57
7.2 Morse Fall Risk Assessment Scale 57
7.3 Gait Analysis 59
7.3.1 Room Setup 59

7.3.2 The Gait Test 59
7.4 Final Morse Fall Risk Scale 60
8. Dashboard 62
8.1 View Visits 64
9. Account Settings 65
9.1 Profile 65
9.2 Purchase Subscription 65
9.3 Push Notification Status 66
9.4 Duplicate Alert Prevention 66
9.5 Alert History 66
9.6 Link Alexa Together (US Server Only) 67
9.7 Invite Secondary User 70
9.8 Dark Mode 71
9.9 App Version 71
9.10 Terms of Services 71
9.11 Switch Account 71
9.12 Log Out 73
9.13 Delete Account 73
9.14 Provide Feedback 73
10. Sentinare Web Hub 74
10.1 Rooms 74
10.2 People 75
10.3 Alerts 77
10.4 Select Streams 77
10.5 Visits 78
11. API for Third-Party Integration 80

Revision History

Date	Version
October 23, 2019	Firmware version: 0.6.225 App version: 1.4.6
November 11, 2019	Firmware version: 0.6.225 App version: 1.4.6 Minor revision
November 14, 2019	Firmware version: 0.6.227 App version: 1.5.0
November 16, 2019	Firmware version: 0.6.228 App version: 1.5.0
February 8, 2020	Rearranged chapter order
February 25, 2020	Firmware version: 0.7.242 App version: 1.7.9
April 5, 2020	Firmware version： US-0.7.248, CN-0.7.259, CA-0.7.262. App Version: 1.7.24 Changes： 1.3, 1.5, 2.1, 3.2, 4.1, 4.2.5, 4.2.13, 4.2.14, 4.2.16, 5.2, 7.1
July 26, 2020	Firmware version: CA-0.8.268, CN-0.8.264, US-0.8.253 or later App version: 2.2.18 or later Main Changes: • New feature: Fall Risk Assessment (Sec. 7) • New feature: False Alert management (Sec. 6.2) • Merge Area and Zone into Room • Other changes to reduce false alarms • Improved streaming performance with lower delay and bandwidth • Restart and Factory Reset via Bluetooth • Turn on phone loud speaker in 2-way audio • Add 2-way audio server connection indicator • Add LED and alert chime toggles • Add waving detection sensitivity
Nov. 6, 2020	Firmware version: CA-0.8.274, CN-0.8.268, US-0.8.260 App version: 2.4.16 Main Changes: • New feature: Region of Interest (Sec. 4) • New feature: User Group (Sec. 5) • New feature: Web interface (Sec. 10) • The “Wandering Risk” flag is removed, which can be achieved by defining a person group for people with wandering risk. • Display ROI map in the background. • Change floor map color. • Change to colorful stick figures. • Improved face recognition and tracking. • Improved IR light control.

	• Improved Bluetooth connection. • Fixed support of Chinese WiFi names.
February 16, 2021	Firmware version: CA-0.9.280, CN-0.9.273, US-0.9.268 App version: 2.5.6 Main Changes: • Added person information and medical history page. • Added Visits page in the Dashboard. • Improved hand waving detection performance in night vision mode. Changed the default value of Delay Fall Alert to OFF, and the default Viewing Privacy mode to Natural.
May 2, 2021	Firmware version: CA-0.9.280, CN-0.9.273, US-0.9.268 or later App version: 2.5.27 Main Changes: • Rebranded the App and sensor names to Sentinare • Updated the Rooms page to allow easier navigation between rooms and sensors • Added Switch Account description • Updated Add Person part
May 18, 2021	App version: 2.5.28 Added the privacy mode in Room management.
May 22, 2021	Added Ch. 11: API.
July 20, 2021	Firmware version: CA-0.9.285, US-0.9.271, CN-0.9.275 or later. App version: 2.7.20 Main Changes: • Added stick figure recording/playback feature in the sensor page • Added device online/offline status in the Room page • Added people and device status summaries in the Dashboard page • Various bug fixes, such as in fall risk assessment.

Nov. 15, 2021	Firmware versions:
	• Cypress sensor: No change
	• Sentinare 2 sensor: US-0.1.177, CN-0.1.177, CA-0.1.182.
	App version: 2.7.46
	Main Changes:
	• Sentinare 2 firmware:
	  o Voice call is enabled
	  o Fall risk assessment is enabled
	  o Fixed flipped view bug in normal installation
	  o Fixed setting up WiFi bug for iPhone 6/6s/7 with iOS 12
	  o Fixed color distortion problem
	• App:
	  o Changed the fall risk assessment UI
	  o Fixed stopped streaming problem when the app is minimized and screen is turned off

	o Fixed session expired error o Moved privacy mode setting from “Room” to “Calibrate” page o Modified ‘Person” page
Dec. 20, 2021	Firmware versions: • Cypress sensor: US-0.9.274, CN-0.9.277, CA-0.9.287. • Sentinare 2 sensor: US-0.1.182, CN-0.1.184, CA-0.1.189. App version: 2.7.54 Main Changes: • Cypress firmware: Adding low-light mode • Sentinare 2 firmware: o Adding low-light mode o Fixed the bug that face recognition sometimes does not work o Fixed some WiFi connection bugs o Fixed some stick figure recording bugs • Sentinare App: o Fixed Android 11 and iOS 13 permission request problems for Bluetooth, Local Network, and Location o Duplicated Privacy Mode and Upside Down Installation toggles in the sensor page and Calibrate pages o Improved Bluetooth timing o Added command in the alert notification to open the sensor page directly
Mar. 21, 2022	Firmware version: • Cypress sensor: US-0.9.274, CN-0.9.277, CA-0.9.287. • Sentinare 2 sensor: US-0.1.184, CN-0.1.186, CA-0.1.191. • App version: 2.8.48 Main Changes: • Added Link Alexa Together for US server • Added Purchase Subscription page • Added multiple-choice health conditions in People page • Combined hand-waving toggle and hand-waving sensitivity toggle • When trying to add a sensor that is already in another account, the App can now display the previous account name • Fixed flashing white light bug after power cycle • Fixed various WiFi/Bluetooth connection bugs

1. Installation and General Information

1.1 Introduction

Thank you for choosing the Sentinare smart activity sensor system, the ideal solution for senior care, remote patient monitoring, telehealth, and other applications where privacy is indispensable. The Sentinare sensor has a build-in AI chip, and uses the latest deep learning algorithms to monitor the activities of people, collect useful activity statistics, and identify changes to routine patterns. When emergencies such falls are detected, it can notify the caregivers immediately. It also performs fall risk assessment. To protect the privacy, only stick figure animations are transmitted, instead of raw videos. The stick figure animations can be saved in the cloud, which can be used to analyze people's health, investigate incidents, improve quality of service of care workers, help doctors to detect some diseases earlier (such as Parkinson's disease, dementia, and depression), and help doctors and patients during rehabilitation.

Most contents in this user manual apply to both the first-generation Sentinare sensor (Cypress) and the second-generation Sentinare sensor (Sentinare 2). A few features and operations are slightly different, and are explained separately.

Sentinare has the following main features. We are also constantly adding new and exciting features to the system.

- Privacy Preservation
- Fall Detection
- Fall Risk Assessment
- Waving Hand Detection
- Region of Interest (ROI) Monitoring:
    - Entrance/Exit Management
    - Restricted Region
- Stick-Figure Recording
- Face Recognition
- Activity Statistics
- Voice Call
- Infrared Mode
- Secondary User
- Mobile App and Web Interface
- API for third part integration

- Integration with Amazon's Alexa Together (only available in the US now)

The key performances of the Sentinare sensor under good lighting conditions are as follows (the performance will be degraded in poor lighting conditions or night vision mode):

Fall Detection:

- Best detection distance：< 6m
- Max detection distance：10m

Waving Hand Detection:

- Best detection distance:：< 5m
- Max detection distance：8m

Face Recognition:

- Best recognition distance：< 4.5 m
- Max recognition distance：6m

Voice Call:

- Best voice distance：< 5 m
- Max voice distance：10m

1.2 Installing iOS App from Apple App Store

The iOS version of the Sentinare App (formerly known as the Cypress) can be downloaded from AltumView website www.altumview.com or www.altumview.ca, or by searching " Sentinare Activity sensor" in the Apple App Store, or using the following link:

https://apps.apple.com/app/sentinare-activity-sensor/id1426892725

Available on the App Store

1.3 Installing Android App

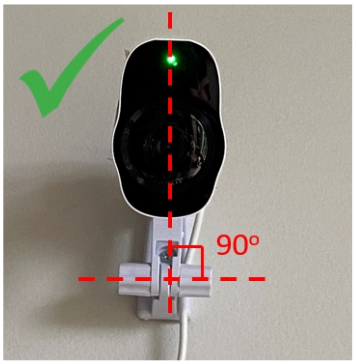
The Android version of the Sentinare App can be downloaded from the following links:

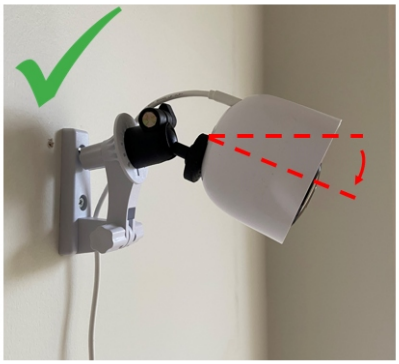
https://play.google.com/store/apps/details?id=com.altumview.app

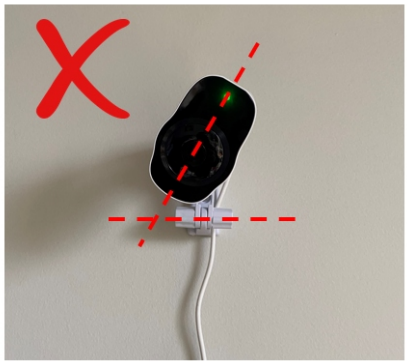
https://altumview.ca/android-download/

1.4 Installing the Sentinare Sensor

Install the Sentinare activity sensor at a height of about 1.8-2.5 meters from the floor and tilt it down slightly so that it can monitor most of the floor in the room. The sensor should not rotate to the left or right, i.e., the line between the lens and the LED light should be vertical. Otherwise the fall detection algorithm could be confused and generate false alarms.







Please avoid facing the sensor at strong light sources such as a big window. Then power up and wait for about a minute until the LED starts to flash white, indicating that the sensor is ready to be added to the system. See the following chapters for details.

The bracket of the sensor can be mounted on a horizontal surface, on the wall, or on the ceiling. For Sentinare 2, the rotating arm of the bracket can be installed in one of two directions.

Both Cypress and Sentinare 2 can be installed upside-down. In this case, you need to turn on the Upside-Down Installation flag in the App.

The following are different ways to install Sentinare 2, with the optional ball head (the USB cable is not shown).

1.5 Disclaimers, Limitations and Known Issues

Please note that as in any other Artificial Intelligence products, the algorithms of our products are not perfect, although we are working hard to improve them constantly. By purchasing our products and using our services, you agree to our terms and conditions as stated in our website and in the App, including the disclaimers, limitations of our products and services, and limitation of liability. In particular, you agree that the device is not guaranteed to detect all possible abnormal events that it is designed for, and is not guaranteed to collect all information without any error. We cannot guarantee in any way that the device will prevent accidents, death or personal injury to you or others, or prevent property damage, illegal entry, or undue delay in any emergency service response, and we are not liable in any manner for any injury, loss or damage resulting therefrom. If you do not agree with these clauses, you should not use our products.

The following is a list of known issues and limitations of our products. The list is by no mean complete, and is updated frequently.

- Not all emergencies such as falls and waving hand can be detected correctly, because the performances can be affected by many factors, such as lighting, distance, angle, and occlusion.
- The activity statistics is not always correct, especially when the person being monitored is on the bed and is covered by blanket.
- The face tracking could have temporary error when multiple people's motions cross over.

- The performance of the product in night vision mode is generally worse than the day light mode.
- The voice call does not work when the user's IP address is in IPV6 format. We are working to resolve this.

1.6 Troubleshooting

1.6.1 Known Issues

- **Sentinare 2 voice call quality:** The quality of voice call of Sentinare 2 is still not good enough. We are working on a solution for this problem.

- **LED flashing white**: For Sentinare 2, if the WiFi strength is very weak, the device's LED might turn to flashing white after failing to reconnect to Wifi. To resolve this issue, please make sure that Wifi signal is strong enough, and power cycle the device. It will reconnect to Wifi again and come back online.

- **Firmware upgrading cannot start**: The firmware upgrade of Sentinare sensor usually needs about five minutes. If after clicking the upgrade firmware command in the App, the status of the sensor in the App quickly change from upgrading to the normal status, and the firmware version is still the previous version, please first try again and make sure it is not due to network glitch. If after a few attempts, the upgrade still cannot start, please restart the sensor. Sometimes factory reset is needed (se Sec. 4.2.17) before upgrading again.

- **Firmware upgrading got stuck**: Sometimes when upgrading the firmware, the sensor could be stuck and keeps flashing blue light for a very long time (more than 10 minutes). In this case, it is safe to unplug the power of the sensor and re-plug. If the download was complete, the sensor will upgrade to the new version after restarting. Otherwise the download will continue automatically and the sensor will still flash blue. Multiple unplugs might be needed for the sensor to complete the upgrading. If it still keeps flashing blue after several unplugs, please perform a factory reset from the App or manually perform the factory reset (see Sec. 4.2.17) before upgrading again.

- **Web Hub login error**: When logging into the Sentinare Web Hub (Sec. 10), if you get the following error, please clear the cookie and cache of your web browser, or use the incognito mode of your browser, or use a different type of browser:

  {"status_code": 401, "message": "Token is invalid or expired.", "success": false, "error": {"name": "AccessDeniedError", "code": 28}}

- **Cypress temperature:** The metal ring of the first-generation Cypress sensor is the heat sink of the CPU. Therefore its temperature is a bit hot, but the tempratures of other parts of the sensor are normal, and the sensor meets the safety standard.

1.6.2 Other Troubleshooting

- **Verification Email**: If you could not receive the verification email after registering a new account, please check if your email is spelled correctly, and also check the junk folder of your email account.

- **Firmware and App Versions**: Please always use the latest firmware and app versions. Some new features in the firmware (or App) may not work with an old App (or firmware).

- **App Permissions**: The Sentinare App needs certain permissions to work properly. When you first use the App and some of its features, it will ask for the following permissions. Please allow these accesses when the App is running. These permissions can be changed in the Setting page of your mobile device.

    - Push notification
    - Bluetooth
    - Location (required to use Bluetooth)
    - Local Network (required to use voice call)
    - Microphone
    - Camera

- **WiFi Protocol**: For security reason, only secure WiFi networks with WPA2-PSK (or WPA2-Personal) protocol are supported. Open, WEP, WPA, and WPA2-Enterprise are not supported. The WPS (Wi-Fi Protected Setup) setting should be disabled. See the Setup WiFi section in Sec. 4 for details.

- **Whitelist**: When you try to add a sensor to your account, if you get an error message stating that the sensor is not in the whitelist of the server, it means that the sensor is registered in a different server from the server that your user account is registered. You need to register your account in the correct server. Currently, three servers are available, in US, Canada, and China. If you are in these countries, your sensor is default to your country's server. If you are in other countries, your devices are usually registered in the US server, unless we notify you otherwise.

- **Upgrading**: When upgrading the firmware, if the status of the sensor in the App is "Upgrading…" for a long time, please press the screen and pull down to reload the page and refresh the status, because sometimes the App is not able to refresh by itself.

- **Calibration after Position Change**: After setting up the WiFi, floor calibration should be performed in order to use the fall detection feature. Every time after the position or angle of the sensor is changed, the calibration should be performed again, otherwise the fall detection will not work properly.

- **Cannot Find Device**: At any time, each Sentinare activity sensor can only connect to one device or App via Bluetooth. Sometimes if your Sentinare App gets a Bluetooth-out-of-range error when trying to connect to a Sentinare sensor, please make sure the sensor is not currently connected to other device or App via Bluetooth. Sometimes the other device could be your cell phone. To check if this is the case, please go to the phone's Settings > Bluetooth page. If the sensor is connected in this page, please turn off the phone's Bluetooth to stop the connection, then turn on the Bluetooth, and connect to the sensor from the Sentinare App again. You can also factory reset the device to disconnect its Bluetooth link.

- **Duplicate Alert Prevention**: To test the various alert features of the system, please set the "Duplicate Alert Prevention" in the Setting page to be "None", such that every alert will be sent to the App. In addition, please turn off the "Delay Fall Alert" in the sensor page, such that an alert will be sent immediately after a fall is detected, without waiting for 30 seconds.

- **General Error Recovery Procedure**: If the App behaves unexpectedly or stops responding, please force close the App using the following methods for iOS and Android respectively, and then restart it.

  https://support.apple.com/en-ca/guide/iphone/iph83bfec492/ios
  https://support.google.com/android/answer/9079646?hl=en

  If the sensor behaves unexpectedly or stops responding, please follow the following procedure:
  - Restart the sensor from the App.
  - If the problem persists, power down and power up the sensor again.
  - If it still does not work, remove the sensor from the account, and re-add it.
  - If the problem still cannot be resolved, please perform a factory reset. If Bluetooth connection with the sensor is available, the factory reset can be done via the App. Otherwise physical factory reset can be done via the reset hole in the back of the

Cypress sensor or the reset button of the Sentinare 2 sensor. See Sec. 4.2.17 Factory Reset for details.

1.7 Technical Support

If you have any technical questions, please contact us at contact@altumview.com.

1.8 Certificates

	Cypress	Sentinare 2
FCC ID (US)	2ATH6-CYPVS1	2ATH6-AVG20WF5
IC (Canada)	25095-CYPVS1	25095-AVG20WF5

1.9. Federal Communications Commission (FCC) Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generate, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

RF Exposure Warning

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This product may not be collocated or operated in conjunction with any other antenna or transmitter

This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.

1.10 Innovation, Science and Economic Development Canada (ISED) Interference Statement

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

Cetappareilestconforme à la norme RSS d'Industrie Canada. Son fonctionnementestsujet aux deux conditions suivantes:

(1) ledispositif ne doit pas produire de brouillagepréjudiciable, et

(2) cedispositifdoit accepter tout brouillagereçu, y compris un brouillage susceptible de provoquer un fonctionnementindésirable.

IMPORTANT NOTE:

Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body.

Déclarationd'exposition aux radiations:

Cetéquipementestconforme aux limitesd'exposition aux rayonnements IC établies pour unenvironnement non contrôlé. Cetéquipementdoitêtreinstalléetutilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

Industry Canada (IC)

CAN ICES-3 (B)/NMB-3(B)

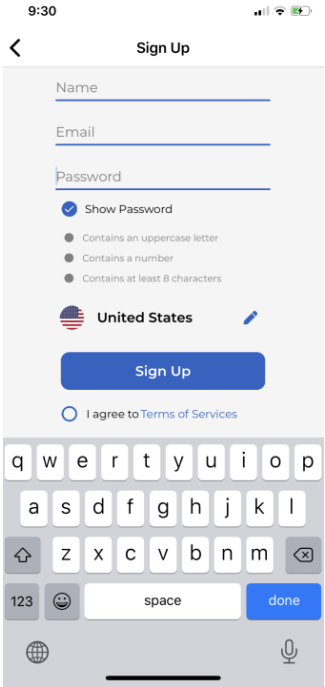
2. User Account Management

2.1. Signing Up

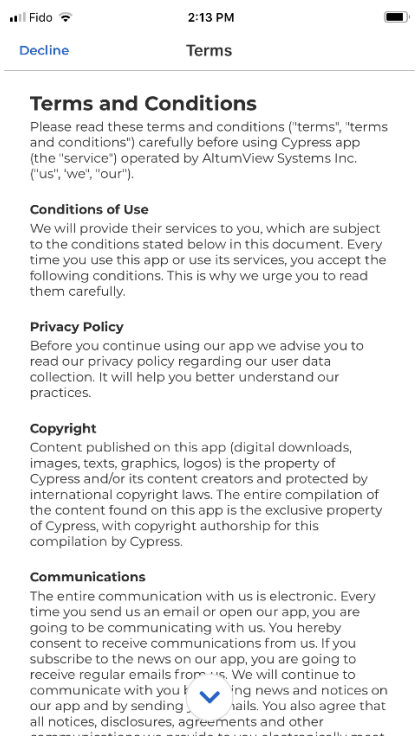
- Open the Sentinare App, and tap the “Create an Account” in the front page.

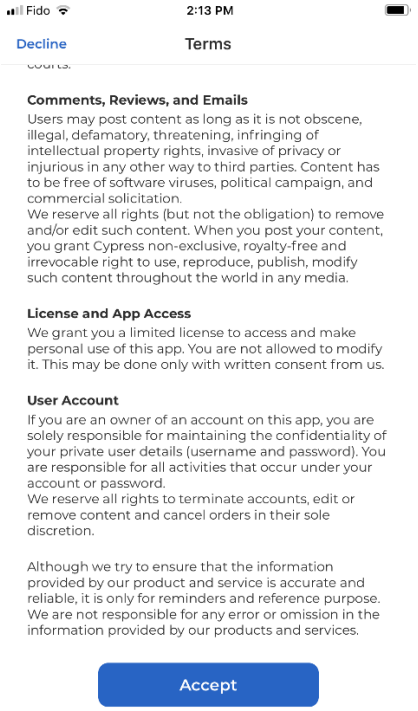
- On the “Sign Up” page, tap the pencil icon to choose a server location. Currently there are three servers: Canada, United States, and China. When a sensor is sold, its serial number is added to the white list of one of our servers, based on the country of the customer.

- Fill in name, email, and password, and tap the “Sign Up” button. The email address and password are required for future login. The password should have at least 8 characters and include at least one upper case letter and one digit.

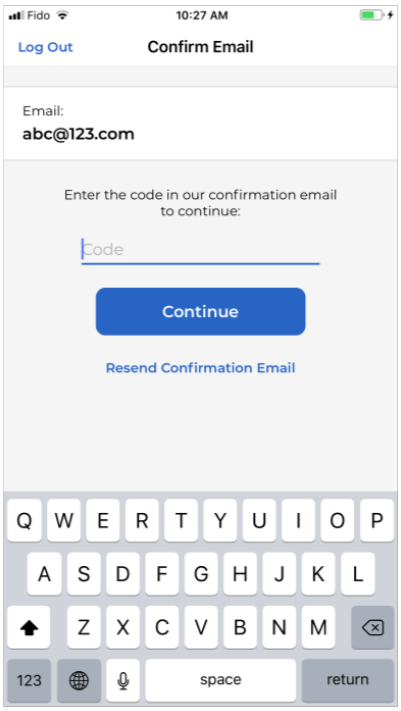


- In order to use this product, you need to accept our “Terms of Services” . **Please click Terms of Services and read it carefully.** Use the drop-down button to see the entire document. If you accept these terms of services, please tap the “Accept” button at the bottom of this page. The terms of services can also be found in the Setting page of the App, or AltumView website.



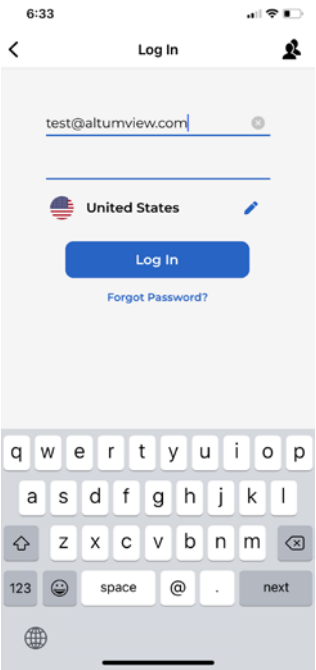


- After clicking Sign Up, you will receive a verification code through email from altumview.com. If you could not get it after a few minutes, please make sure your email is spelled correctly, and check your junk mail folder.
- Enter the verification code in the “Confirm Email” page, then tap “Continue” to enter your account.



2.2 Login

- Tap the “Log in” button in the front page to open the Log In page, where you can log in to your account using your email and password. You also need to specify the server for your sensor.



- Retrieve password: If you have forgotten your password, you can tap on "Forgot Password?". In the "Forgot Password" page, please fill in your registered email address in the "Email" field and the new password will be sent to your registered email address.
- Switch Account: The App can save the login information of multiple accounts, and allow switching between them without having to re-type the login information. To switch to a saved account, users can tap the multiple-people icon in the upper right corner of the login page, and select the desired account. More details are explained in the Switch Account part in Sec. 9.
- App version and Dark Mode: In the front page, tap the setting wheel icon in the lower-right corner can display the App version and choose to use Dark Mode.

Each account can invite some secondary users to the account. The secondary users can view the sensors and some other information of the main account, but they cannot change the settings of the account. Please refer to Sec. 9.5 for details.

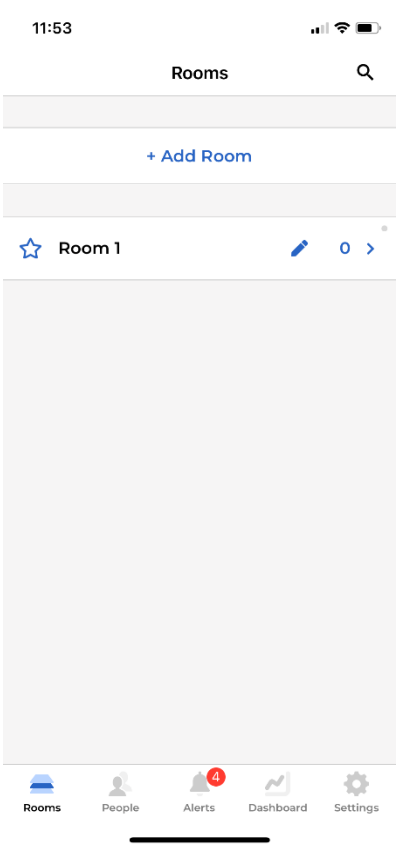
3. Room Management

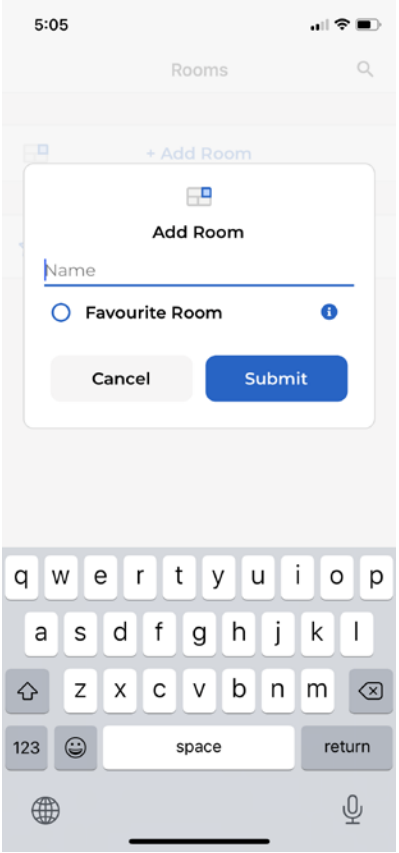
Sentinare sensors can be added to the account and managed by tapping the Rooms icon at the lower left corner of the screen. Each sensor must be added to a Room, and a Room can have up to 10 sensors. The default maximum number of sensors in an account is 50. Please contact us if you need to increase the maximum number of sensors.

Only the main user can change the setting of the room, such as adding, deleting, and renaming.

3.1 List of Rooms

Tap on “Rooms” in the lower left corner of the screen to enter the Rooms page. This page lists all the rooms managed by this account. For a new account, a default Room called “Room 1” is created by the system.

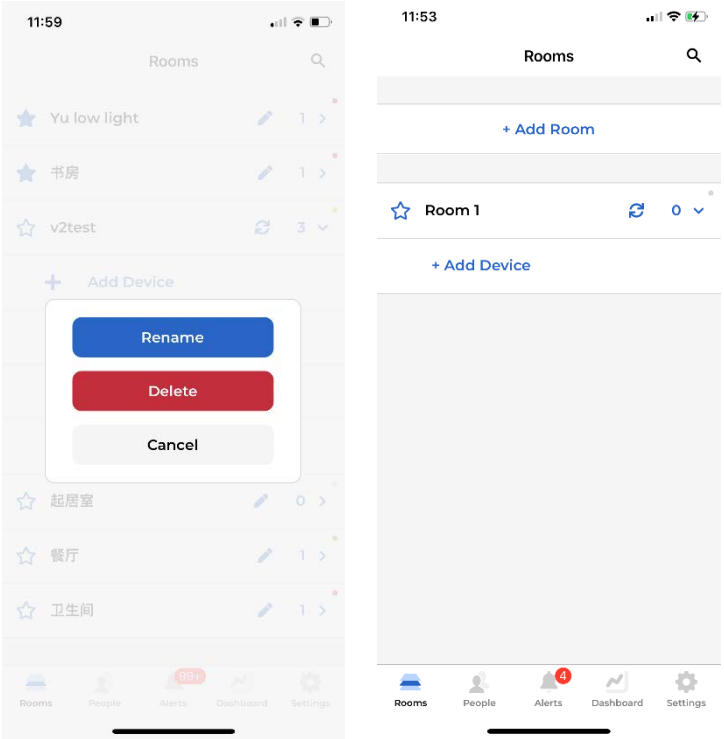




Users can create a new Room in the Rooms page by tapping the “+ Add Room” command in the Rooms page. In the Add Room page, user can input the name of the new room, or check the “Favourite Room” flag to label a room as favourite, which will keep it at the top of the room list in the Rooms page. Favorite rooms are indicated by solid stars to the left of the room names. Other rooms are indicated by unfilled stars. Tap Submit will create the new room.

If there are many rooms, users can search a room in the Rooms page by tapping the magnifier icon in the upper right corner, and input a part of a room name to search it.

Tap the pencil icon next to the room name, a pop-up window will show up, where user can rename a room or delete a room.



The number of devices in each room is displayed to the right of the pencil icon. The initial value is 0. Tap the room name or the arrow next to the number of device will expand this room, and list the devices in the room under the room name. More details will be explained in the next chapter.

After a room is expanded, the pencil icon will become a refresh icon, which can be used to update the latest online/offline status of the sensors in this room.

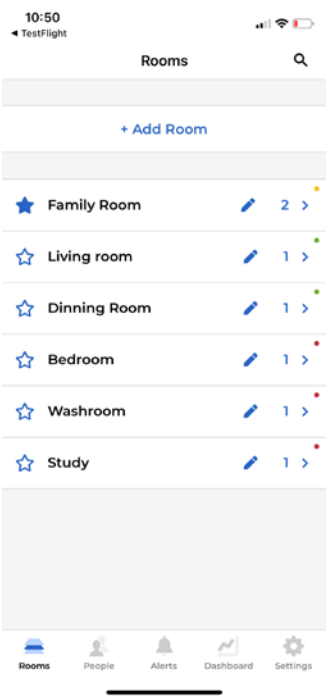
The expanded room can be collapsed by tapping the room name or the number of devices.

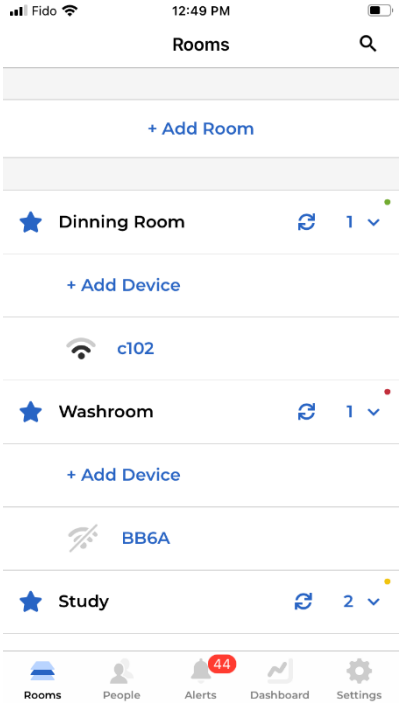
In the expanded room section, users can tap “+ Add Device” to add a new device to the room, which will be detailed in the next chapter.

4. Device Management

There can be up to 10 activity sensors in each room. In the Room page, users can see all the sensors in a selected room by tapping the room name, or tapping the right arrow next to the room name, as shown below. If the WiFi icon to the left of a sensor is black, it means the sensor is online. If the icon is gray with a crossed line, the sensor is offline. To refresh the sensor status, users can tap the refresh icon in each room.

Only the administrator can manage the sensors, and other users can only view them.





In the Room page, a colorful dot is also displayed at the end of each room name, which indicates the online/offline status of the devices in each room. This feature allows users to know the operating conditions of devices in each room by a quick glance.

The dot can have 4 possible colors:

- Gray: There is no device in the room. This is the initial color for each room.
- Green: All devices in the room are currently online.
- Red: All devices in the room are currently offline.
- Yellow: Some devices in the room are online, and some are offline.

The online/offline summary of all devices in the account can be viewed in the Dashboard page (Sec. 8).

4.1 Add a Device

This section describes the main steps to add a sensor to an account, before it can be used. Both the Cypress and Sentinare 2 sensors can be added and managed by the Sentinare App.

4.1.1 Add a Device

Sentinare sensor must be added in a room before can be used. To add a device, the user must be within 10 meters of the sensor, and turn on the Bluetooth of the phone, in order for the Sentinare App to connect to the sensor via Bluetooth.

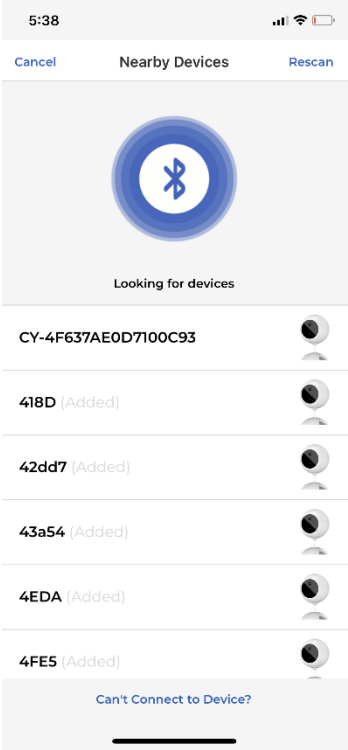
Note that sometimes the sensor could be connected to the phone instead of the Sentinare App. As a result, the App will not be able to connect to the sensor, and user could get a Bluetooth-out-of-range error message. To check if it is this case, user can go to the phone's Settings > Bluetooth page. If the sensor is connected in this page, user can turn off the Bluetooth to stop the connection, turn on the Bluetooth again, and then try to connect to the sensor from the Sentinare App again. Sometimes the Bluetooth-out-of-range error message could be caused when the sensor is paired to another phone nearby. In this case, the other phone needs to disconnect from the sensor from its Settings > Bluetooth page.

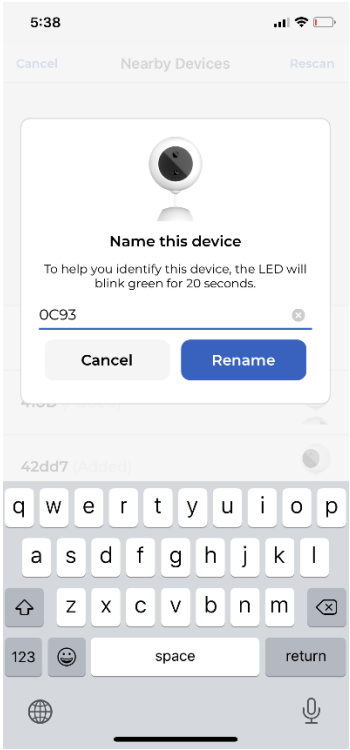
To add a device, tap the Rooms icon in the lower left corner, then expand a room in the Rooms page. In the individual room section, tap the "+Add Device", a Nearby Devices page will be displayed, in which the App will search and list all nearby devices, as shown below. Select the sensor to be added according to its serial number. The LED of the selected sensor will flash green for 20 seconds. In the next page, name the selected sensor to facilitate future management.

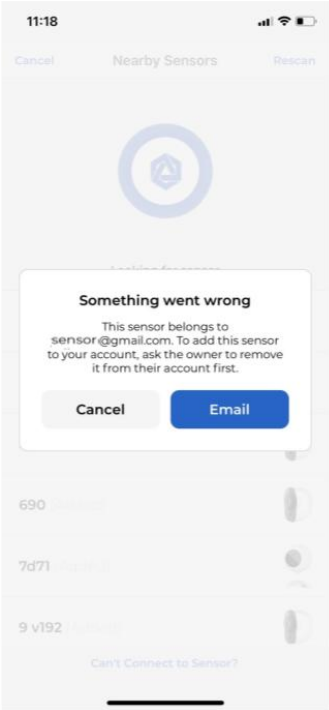
Users can only add sensors that have not been added by any user. A sensor can only be added to one room.

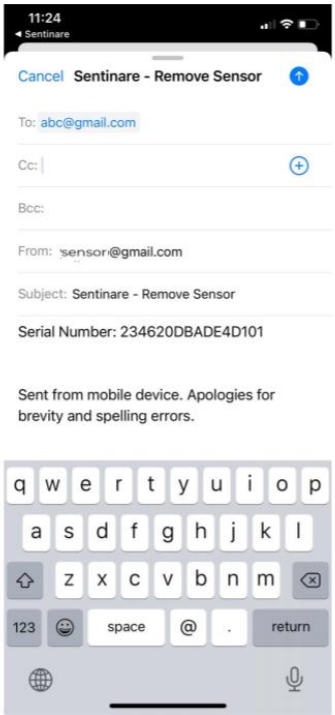
If a sensor has been added by other users, its status will be displayed as "Added", and it cannot be added to other rooms, unless it is removed from the original account.

If the user tries to add a sensor that belongs to another account (with status "added"), a pop-up message will show up, which will display the current account that the sensor belongs to, so that the user can email the current owner to remove the sensor from their account. If you could not contact the current owner, please send an email to contact@altumview.com, and let us know the serial number of the sensor. We will remove the previous record from the server. You can then add it to your account.

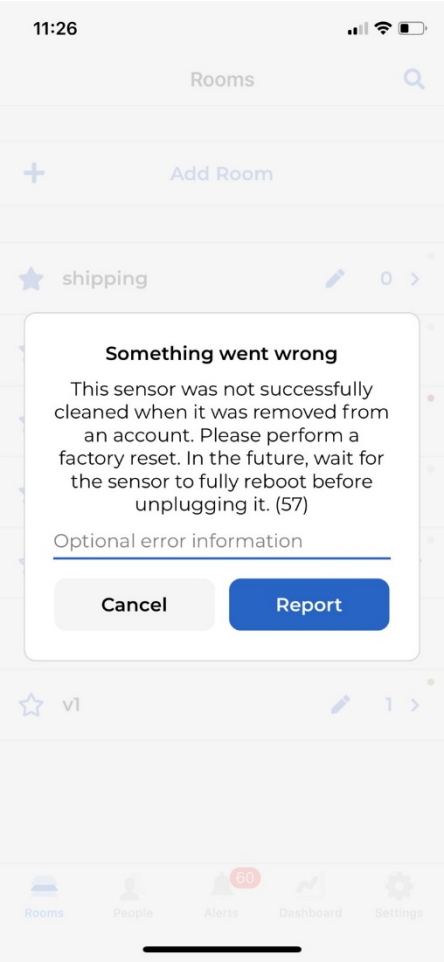

5:38
Cancel
Nearby Devices
Rescan
Looking for devices
CY-4F637AE0D7100C93
418D (Added)
42dd7 (Added)
43a54 (Added)
4EDA (Added)
4FE5 (Added)
Can't Connect to Device?


5:38
Cancel
Nearby Devices
Rescan
Name this device
To help you identify this device, the LED will blink green for 20 seconds.
0C93
Cancel
Rename
42dd7 (Added)
q w e r t y u i o p
a s d f g h j k l
z x c v b n m
123
space
return


11:18
Cancel
Nearby Sensors
Rescan
Something went wrong
This sensor belongs to sensor@gmail.com. To add this sensor to your account, ask the owner to remove it from their account first.
Cancel
Email
690
7d71
9 v192
Can't Connect to Sensor?


11:24
Sentinare
Cancel
Sentinare - Remove Sensor
To: abc@gmail.com
Cc:
Bcc:
From: sensor@gmail.com
Subject: Sentinare - Remove Sensor
Serial Number: 234620DBADE4D101
Sent from mobile device. Apologies for brevity and spelling errors.
q w e r t y u i o p
a s d f g h j k l
z x c v b n m
123
space
@
.
return

It is better to remove a sensor from an account when the sensor is online. Otherwise if a sensor is removed when it is offline, the sensor has to do a factory reset, before it can be added to another account, as shown by the following image. Please refer to Sec. 4.2.11 Remove Device for details.



4.1.2 Set Up WiFi

After adding a sensor to a room, the App will set up the WiFi for the sensor. The sensor will first scan and list available WiFi networks. A sound will be played during the scanning.

Note that for security reasons, in order to set up the WiFi, users must be within 5 meters of the sensor, and turn on the Bluetooth of the phone.

For the same reasons, only secure networks that support WPA2-PSK protocol are supported and listed by the Sentinare App. These networks need a password to access. Unsecure protocols such as Open,

WEP, and WPA are not supported. The WPA2-Enterprise protocol is not supported, which requires individual user name and password.

The supported router's **Security Mode** should be one of the following (different vendors could use different names):

- Auto
- Mixed
- WPA-PSK/WPA2-PSK
- WPA/WPA2 Personal.

The **Authentication Mode** of the router should be one of the following:

- Auto
- Mixed
- WPA2-PSK.

The **Encryption Mode** should be one of the following:

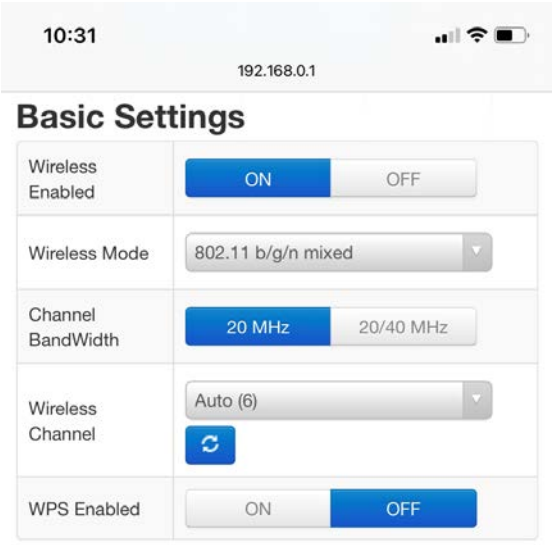
- Auto
- AES
- TKIP/AES
- CCMP.

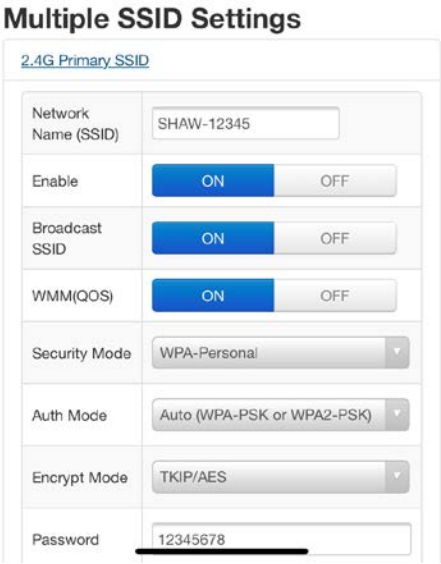
TKIP encryption is not recommended, since it is slower.

The information above is also listed by taping the information icon in the Connect to WiFi page of the App, as shown in the figure below.

In most cases, the default configurations of most new routers are supported by Sentinare. However, some routers have the WPS (Wi-Fi Protected Setup) feature enabled by default (such as some Hitron routers provided by Shaw Communications in Canada), which is not supported by Sentinare. Please turn off the WPS setting by logging into the admin page of your router, usually with IP address 192.168.0.1, and then adjust the WiFi settings according to the requirements above.

The following is an example of the WiFi setup page of a router:

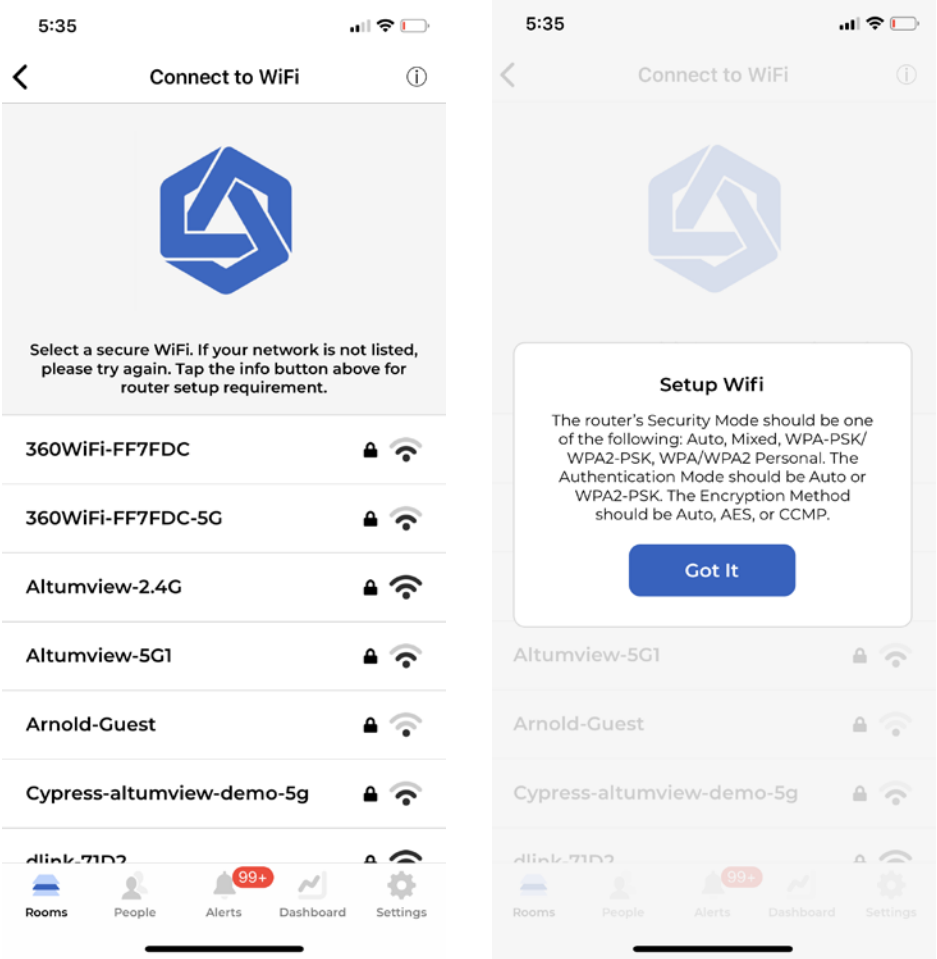




In the WiFi networks listed by the Sentinare App, select the desired WiFi network and enter its password, the LED on the sensor will first turn to red, then change to yellow and blue, and eventually shows a steady green light. After that, this sensor will be successfully added to the account, and will appear in the list of sensors in the selected room.

If your desired WiFi network is not shown in the list, you can rescan the networks for a few times, especially when the WiFi signal is not strong. Please also make sure your WiFi network meets the requirements above.

After a sensor is added into an account, the WiFi can be re-configured, as shown in Section 4.2.3.



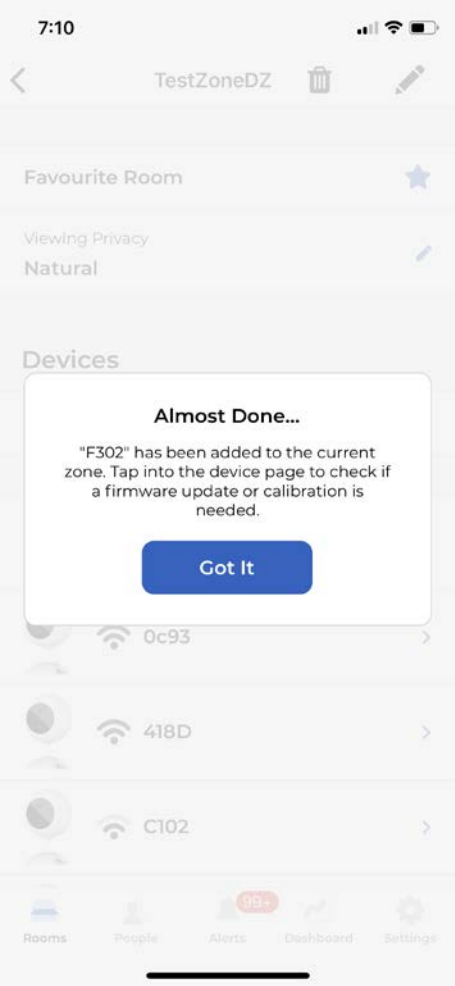
4.1.3 Upgrade Firmware

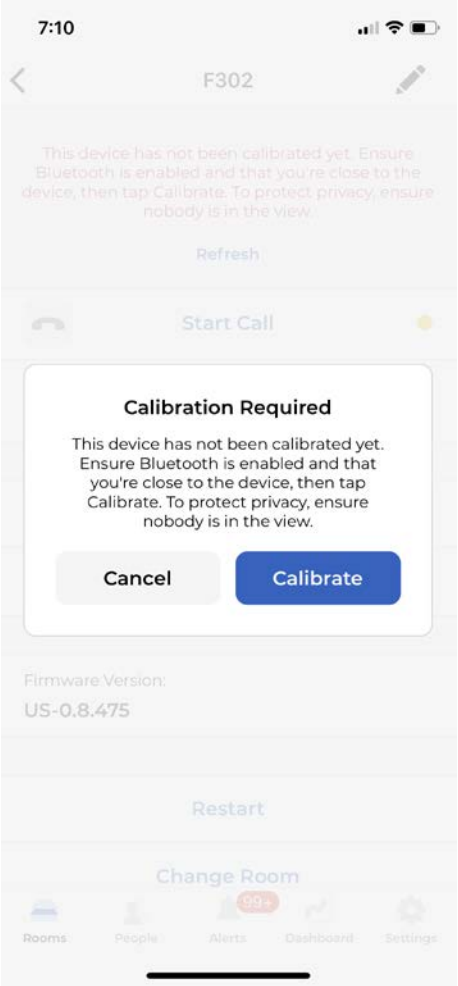
After adding a sensor to the system for the first time, the app will check the sensor's firmware version. If the firmware is not the latest one, the app will ask the user to upgrade the sensor's firmware before performing any other operations. After the first use, users can check new firmware version in the device page of the App, as shown in Sec. 4.2.

When upgrading the firmware, if the status of the sensor in the App is "Upgrading…" for a long time, please press the screen and pull down to reload the page and refresh the status, because sometimes the App is not able to refresh by itself. Also, during downloading the new firmware, the LED of the sensor will blink blue. Usually the downloading will take less than 5 minutes. Sometimes due to network issues, the download could be stuck, and the LED could blink blue for more than 15 minutes. In this case, it is safe to unplug the power of the sensor and re-plug. If the download was complete, the sensor will upgrade to the new version after restarting. Otherwise the download will continue automatically and

the sensor will still blink blue. Multiple unplugs might be needed for the sensor to complete the upgrading. If it still keeps flashing blue after several unplugs, please perform a factory reset from the App or manually perform the factory reset (see Sec. 4.2.17).

Sometimes if the WiFi signal is too weak, the sensor could go offline and blink white after restarting. In this case, please set up the WiFi again from the App, and the download and upgrade will then continue automatically and the sensor will still blink blue.





For Cypress sensor, **make sure the sensor's power supply is not interrupted when the sensor is blinking <u>purple</u> during upgrading,** otherwise the sensor might fail to start up and has to be returned for repair due to update failure.

4.1.4 Calibration

After adding a sensor to the system for the first time, and after the firmware upgrade, the app will ask the user to calibrate the sensor to detect the floor area in the room before it can be used for fall detection, as shown in the figure above.

Note: The current algorithm only sends alert when falling to the ground is detected. Falling on couch or bed is not considered dangerous and therefore will not trigger alert.

Make sure that no people are in the view of the sensor during the calibration, in order to protect user's privacy. After that, every time the position or angle of the sensor is changed, the calibration should be done again manually.

To do the calibration, tap the "Calibrate" command to enter the Calibrate page, as shown below. If the sensor has not been calibrated, then when you enter the Calibrate page for the first time, the sensor will automatically capture a background image and start to detect the floor in it. For the Cypress sensor, the calibration takes about 15 seconds. For the Sentinare 2 sensor, the calibration takes about 30 seconds.

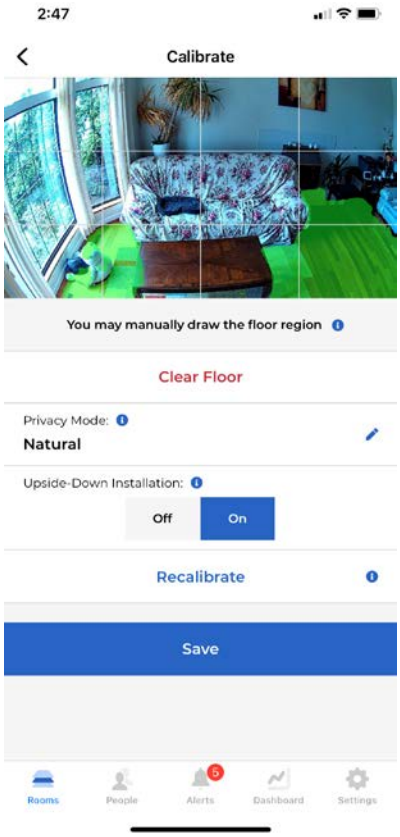
If the sensor was calibrated before, the App will first display the previous background image and floor map. To update the calibration for the current sensor position, tap the "Recalibrate", the sensor will take a new background image and run the calibration algorithm to it. If the user is satisfied with the floor calibration result, tap the "Save" button to save the result and exit the page.

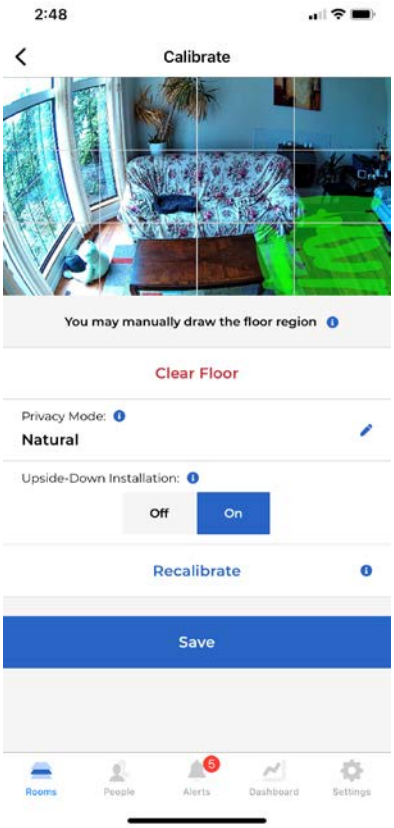
If the sensor is installed upside-down (for Sentinare 2, the USB port is in the top if the sensor is installed upside-down), the initial background image taken in the calibration page will be upside-down. To display the correct image, please turn on the Upside-Down Installation toggle in the calibration page (Sentinare 2 only), and then recalibrate.

The Upside-Down Installation toggle is also available in the sensor's main page (for both Cypress and Sentinare 2). If the sensor is installed upside-down, you can set Upside-Down Installation toggle to ON in the sensor page before entering the calibration page. This ensures that the first background image automatically captured in the Calibrate page is correct. This is handy if you plan to add a batch of sensors in the upside-down way.

Manual Calibration

Sometimes the auto calibration algorithm may mis-calibrate some non-floor areas as floor, or miss some floor areas, which could cause false fall detection alarms or miss some falls. In this case, users can do manual calibration. To do this, first tap the "Clear Floor" command to clear the automatic calibration result, and then use a finger to **redraw and fill up** the correct floor area on the screen, as shown by the second image below. After that, tap the "Save" button to save the result.





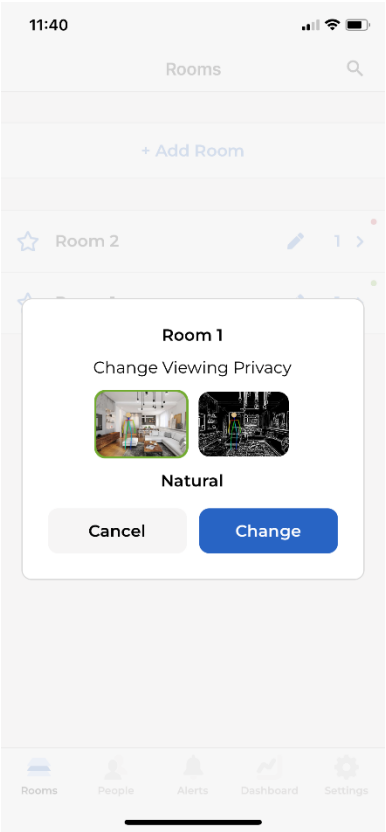
Privacy Mode

In the “Calibrate” page, there is a “Privacy Mode” switch, where user can change the privacy mode of the device’s background image.

The background image of each sensor can be set to “Natural” (default) or "Private" mode. When set to “Natural”, the original background image will be shown during streaming and in the alert messages. When set to “Private”, only the black/white edge information of the background image is shown during streaming and in the alert messages, as shown by the figures below. This can hide some details of the room and protect user’s privacy.

When the background image mode of a sensor is changed, to make the change effective, users have to re-calibrate this sensor to update the background.

The Privacy Mode switch is also available in the sensor page. See Sec. 4.2.12. If you plan to add a batch of sensors in the privacy mode, then before entering the Calibrate page, you can set the Privacy Mode switch to Private in the sensor page. This ensures the first background image automatically captured in the Calibrate page is in the private mode, and there is no need to recalibrate.



Notes:

1. **To protect privacy, make sure that no people are in the view of the sensor during the calibration.**
2. **Users must be within Bluetooth range of the sensor (~5m) in order to do the auto-calibration, because the background will be updated. In this case, please ensure that the phone's Bluetooth is turned on, and that no other phone is paired to the sensor.**
3. **Manual calibration can be done remotely, because the background is not updated.**
4. **Currently the sensor only sends alerts for falls where the upper body of a person is on the ground. If a person falls but sits on the ground, the sensor may not send the fall detection alert. To trigger the alert and get the help in this case, the person can either fall to the ground completely, or face the sensor and wave a hand to trigger the waving detection alert, see Sec. 4.2.15.**

4.1.5 Other Important Settings

This completes the necessary steps to add a sensor to the account, and the basic features of the sensor can be used, such as sticker figure streaming, fall detection and waving-hand detection. However, to use other face recognition-related features, such as Region of Interest and statistics of daily activities, the people information needs to be added to the system, as show in Sec. 5.

Note that if the account already has some people's information (including their faces), the face features will be downloaded to a newly added sensor after the calibration, during which the sensor will display blue light. Once the download finishes and the light becomes green, the sensor will be able to recognize these people and the App will display their names in the steaming page.

There are some important settings that affect the behaviors of the sensor, such as the following. Please refer to the corresponding sections for details.

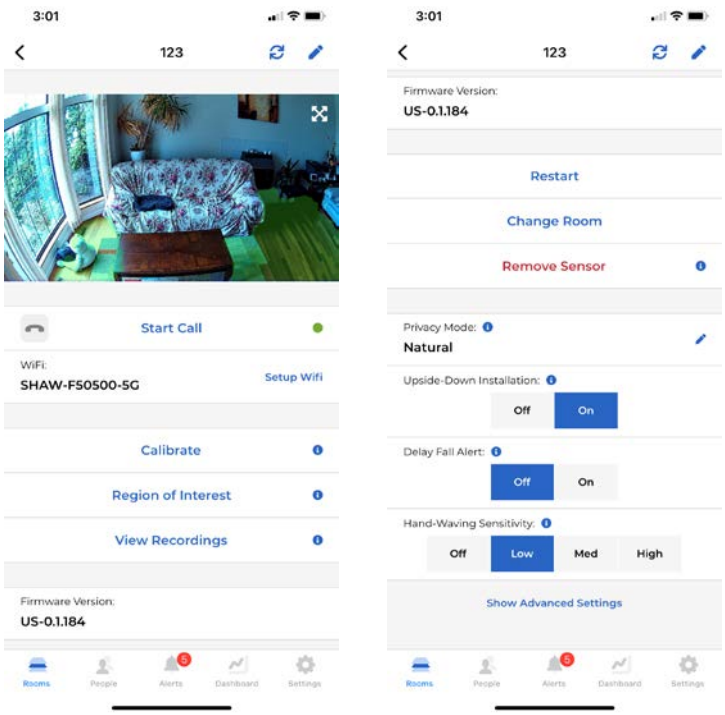
- Upside-Down Installation (Sec. 4)
- Delay Fall Alert (Sec. 4)
- Push Notification Status (Sec. 8)
- Duplicate Alert Prevention (Sec. 8)

4.2 Device Streaming and Setting

In the individual room page, tap on a sensor in the sensor list will enter the sensor's streaming and setting page, as shown below. This page allows users to view the video stream from the sensor in real time (people are rendered by stick-figure animation to protect privacy) and configure the device, such as renaming device, refresh the display, start voice call, setting up WiFi, calibrating device, defining Region of Interest, checking recorded stick figures, updating device firmware, restarting device, moving device to another room, and removing device from system.

Users can also turn on or turn off some features, such as Delay Fall Alert, LED Green Light, Alert Sound, Hand-Waving Detection, and Hand-Waving Sensitivity.

Users can also access some advanced settings by tapping the Show Advanced Settings command, such as serial number of the device, flipping device view, turning on/off some other features. The details are explained below.



4.2.1 Rename Device

To rename the activity sensor, tap the pen icon in the upper right corner of the sensor settings page, and change the name of the sensor in the pop-up "Change Name" window.

4.2.2 Refresh Display

This button is on the upper right corner, next to the pen icon. It is used to refresh the streaming window in the sensor page, if the stick figures are not displayed automatically.

4.2.3 Voice Call

Users can call a sensor via the "Start Call" button in the device page, or in an alert page (explained later). After starting a call, users can start two-way voice communications via mobile APP and the sensor. In Cypress sensor, during the two-way call, the LED of the sensor will blink cyan to indicate a voice call session is going on. Sentinare 2 will have this LED feature in the future.

4.2.4 Setup WiFi

Users can set up the WiFi by tapping the “Setup WiFi” command in the sensor page. When a sensor is first added to an account, the app will automatically bring the user to the WiFi setup page. The usage is already given in Sec. 4.1.2.

4.2.5 Calibration

Users can calibrate the sensor by tapping the “Calibrate” command in the sensor page. When a sensor is first added to an account, the app will automatically bring the user to the Calibrate page, after the WiFi is set up successfully. The usage is already given in Sec. 4.1.4.

4.2.6 Region of Interest (ROI)

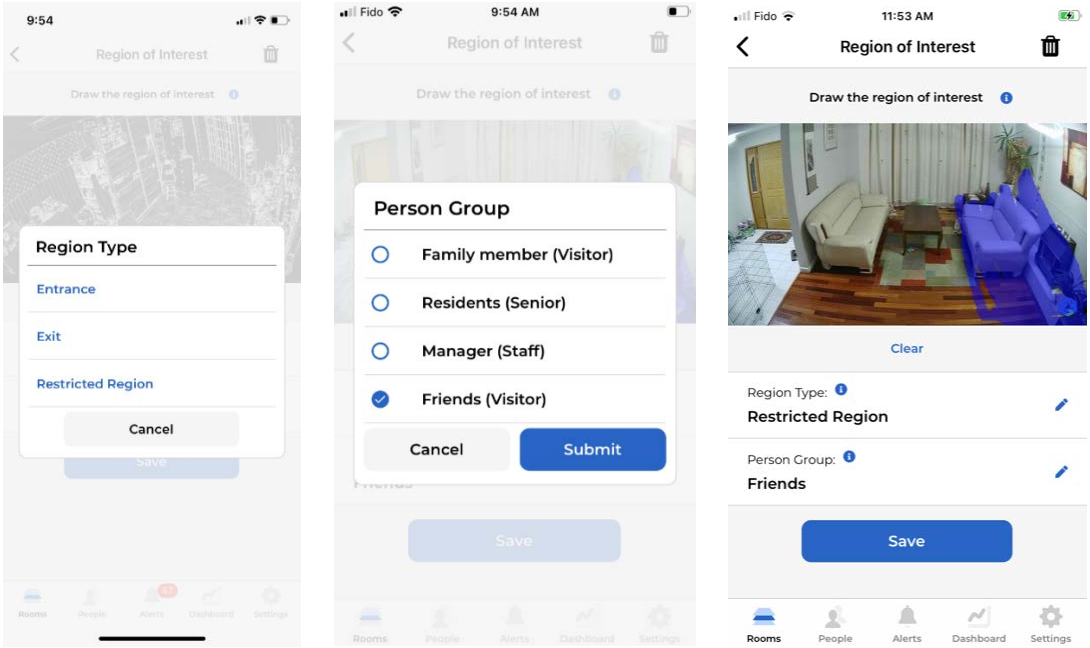
A region of interest (ROI) can be set in the device setting page. Currently three types of ROI are supported:

- Entrance
- Exit
- Restrict Region

To use the ROI, users need to specify both the region types and person group (explained in Sec. 5).

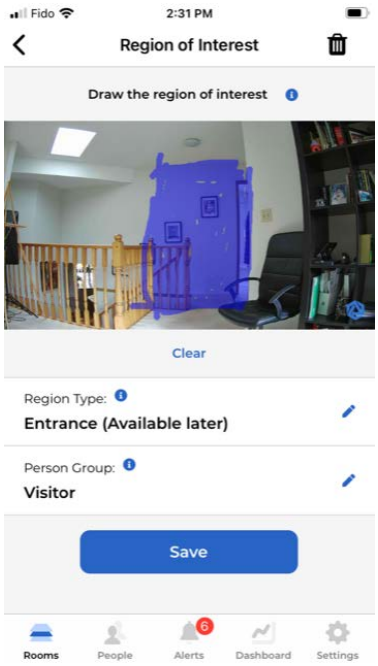
To define the ROI, tap the "Region of Interest" button to go to the Region of Interest page, where users need to choose the region type, people groups that will be monitored in the region, and draw and fill the region of interest on the screen with finger and save it, as shown below. The ROI should be large enough to include the person’s face when the person enters the ROI.

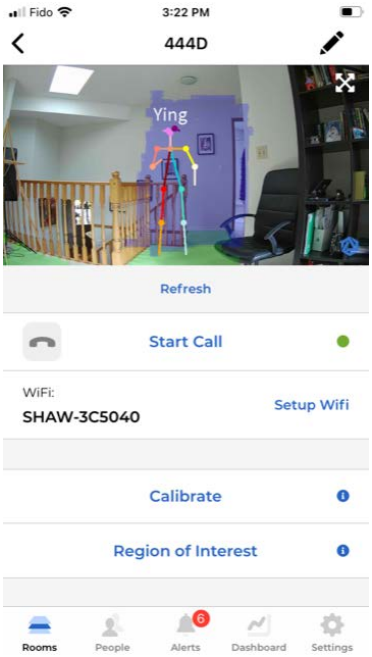
To remove a previously defined ROI, which can be any type listed above, navigate to the Region of Interest page, and tap the garbage bin icon at the upper right corner.



Entrance and Exit

If a ROI is defined as an Entrance, when a person in the selected person groups enter the entrance area and the person's face is recognized by the sensor, a check-in record will be generated. If a ROI is defined as an Exit, when a person in the selected person groups enter the exit area and the person's face is recognized by the sensor, a check-out record will be generated. After the person is first recognized in the entrance or exit region, no more records will be generated within 60 seconds for the same person.





The Entrance and Exit ROIs can be used by organizations to achieve contactless visitor management, or attendance management system for employees.

The check-in and check-out records can be viewed and managed from the "View Visits" command in the Dashboard page, as shown in Sec. 8.

The check-in and check-out records can also be viewed and managed by logging into the following web interfaces using the same user account as the Sentinare app. The details are described in Sec. 10.

User account in the Canada server:
https://app.altumview.ca

User account in the US server:
https://app.altumview.com

User account in the China server:
https://app.altumview.com.cn

Restrict Region

If a ROI is defined as a Restrict Region, when the face of a person in the specified person groups is recognized in the region, an alert will be sent to the cloud and the app. If the person's face is not recognized in the restricted region but is recognized after the face leaves the region, but is still in the same sensor's view, the sensor can still send the alert.

After a restricted region alert is generated, no duplicated alert will be generated in 60 seconds.

One possible application of the Restricted Region is to monitor people with dementia. For example, users can first define a Person Group called "Dementia", then assign people with dementia to this Person Group in their profile pages, and finally define a restricted region from the ROI page for the Dementia person group. After that, any person in the Dementia group entering the restricted region will trigger an alert.

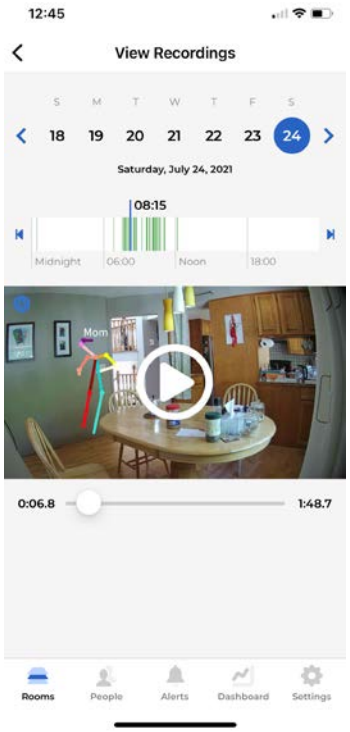
4.2.7 View Recordings

Sentinare protects people's privacy by only transmitting stick figures out of the sensor. It can also record the continuous stick figure activities in the server for future playback and analyses whenever a person appears in the field of view of a sensor. This feature can be used to analyze a person's health, investigate an incident, and improve the quality of service of an organization.

Free access to three days of stick figure is provided by default. Monthly fee is required if you need to access to longer periods of stick figure recordings.

To access the recorded stick figures from a sensor, go to the main page of the sensor, and tap the "View Recordings" command. In the next page, as shown by the following figure, users can use the calendar to select a day within the subscription plan. The activity bar below the calendar will indicate the times that stick figure recordings are available for the selected day. Users can move the cursor in the activity bar to select a specific time, and the corresponding records will be downloaded from the server for playback in the window below the bar.

Each segment of the stick figure recording is up to two minutes. To load the previous or the next segment, users can tap the left arrow or the right arrow at the two ends of the activity bar.



4.2.8 Updating Firmware

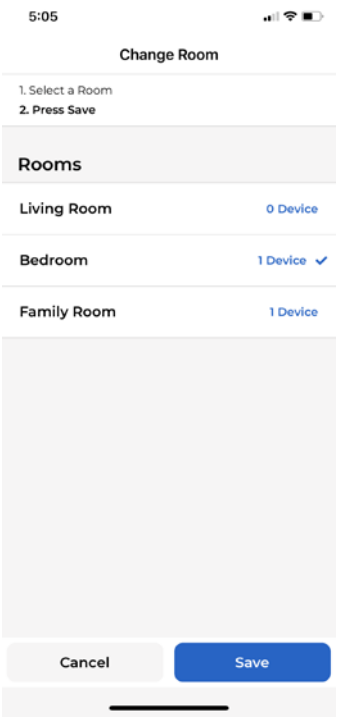
When a new firmware is available, an "Update to..." command will appear below the “Firmware Version” bar. Tap on the blue icon to upgrade the firmware. The sensor might need to reboot several times during the upgrading. Please refer to Sec. 4.1.3 for details.

4.2.9 Restart

Tapping “Restart” in the sensor page will restart or reboot the activity sensor. If the sensor is not connected to any WiFi network, but is within Bluetooth range of the user’s phone, the Restart command can still work.

4.2.10 Change Room

To move an activity sensor to another room, user can tap the “Change Room” command. In the next page, select the desired new room in the list of rooms, and then tap Save. The sensor will be moved to the new room, as shown below.



4.2.11 Remove Device

For security reasons, each sensor can only be added to one account**. If a sensor needs to be added to another account, it must be removed from the previous account first.** This can be done by tapping the "Remove Device" command in the sensor page. **It is strongly recommended to remove a device when it is connected to the WiFi and the internet**. In this case, after the "Remove Device" command is tapped, the sensor will reboot to finish the removing step. Please wait about **two minutes** for the reboot to complete before turning off the sensor. The sensor will first blink white light for about 30 seconds, then display steady white light during reboot, and blinks white light again after reboot.

If for some reasons a sensor has to be removed when it is offline (this could happen when the sensor could not connect to the WiFi and internet, and could not communicate with the app either), the following scenarios will happen:

1. If after the offline removal, the sensor is powered on within the coverage of the same WiFi network as the network it was connected to before the removal, the sensor will automatically connect to the server via the WiFi network, and the server will instruct the sensor to reboot to finish the removal process from the previous account. After the reboot, the sensor is ready to be added to the new account (the LED will turn into flashing white light).

2. If after the offline removal, the sensor needs to be added to a new account that uses a different WiFi network from the previous network, the sensor's status will be displayed as "Added" when the app

scans for nearby devices. In this case, the sensor has to be manually factory reset before it can be added to the new account, a firmware upgrade will be required after that, see Sec. 4.2.17 Factory Reset for details.

4.2.12 Privacy Mode

The “Privacy Mode” switch in the sensor page can be used to control the privacy mode of the sensor’s background image. Its function is the same as that in the Calibrate page explained in Sec. 4.1.4 Calibration.

If you plan to add a batch of sensors in the privacy mode, then before entering the Calibrate page, you can set the Privacy Mode switch to Private in the sensor page. This ensures the first background image automatically captured in the Calibrate page is in the private mode, and there is no need to recalibrate.

4.2.13 Upside-Down Installation

The sensor’s background image and stick figures will be flipped if the device is installed upside-down (for Sentinare 2, the USB port is in the top if the sensor is installed upside-down). To correct this, tap the “Upside-Down Installation” command in the sensor setting page. For the Cypress sensor, the device will restart to make the change effective. On Sentinare 2, changing this toggle does not restart the sensor, and the stick figure will be flipped immediately. In both case, the background image will not be updated automatically. A floor calibration is needed to update the background image.

For the Sentinare 2 sensor, the “Upside-Down Installation” toggle in the sensor page is the same as that in the Calibrate page explained in Sec. 4.1.4 Calibration.

If you plan to add a batch of sensors in the upside-down way, then before entering the Calibrate page, you can turn on the Upside-Down Installation toggle in the sensor page. This ensures the first background image automatically captured in the Calibrate page is correct, and there is no need to recalibrate.

4.2.14 Delay Fall Alert

The “Delay Fall Alert” is a toggle switch. **When “Delay Fall Alert” is ON, the Sentinare activity sensor will only send fall alert 30 seconds after a fall is detected.** During this period, the LED in the senor will flash RED, indicating that a fall is detected. After 30 seconds, if the person still falls on the ground, the LED will turn to purple and a fall alert will be sent. If the person stands up within 30 seconds, the LED will turn off and no alert will be sent.

If the “Delay Fall Alert” is OFF (default value), an alarm will be sent immediately when a fall is detected. This is useful for demo or test purpose and is not recommended for practical use.

The change of “Delay Fall Alert” will restart the device to make it effective.

4.2.15 Hand Waving Detection and Sensitivity

“Hand Waving Sensitivity” is a toggle switch to turn on or off the hand waving detection feature, and select the hand waving sensitivity. When it is turned off, the hand waving detection will be disabled. When the hand waving detection is enabled, a person can wave to the sensor to actively ask for help. The face of the person must be detected by the sensor before an alert is sent out.

Three hand waving sensitivities can be selected: Low, Med, or High. The default value is Low. In this case, to trigger the hand waving alert, the person needs to **face the sensor** and constantly wave his/her hand for about 8 seconds, **and the upper arm should be raised at least to the shoulder height**. After detecting a waving hand, the LED of the sensor will first **blink red** for about 5 seconds. If the hand is waving in most of time during this period, the LED will **turn to purple**. After the LED becomes purple, an alert will be generated to signal that someone is seeking help.

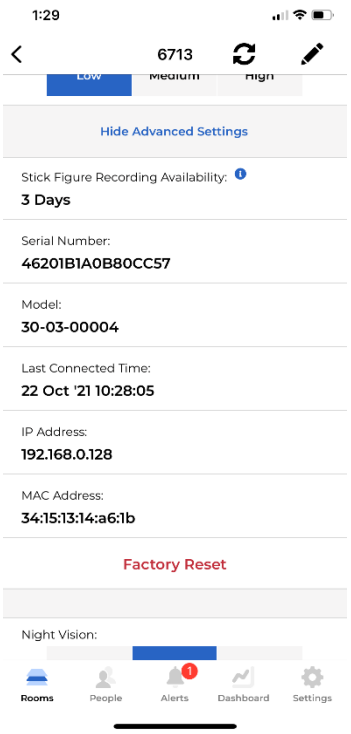
Changing the sensitivity to Med or High will increase the sensitivity, and the person will only need to wave about 5 seconds to generate the alert. In addition, when the sensitivity is High, the upper arm does not need to be raised to shoulder height.

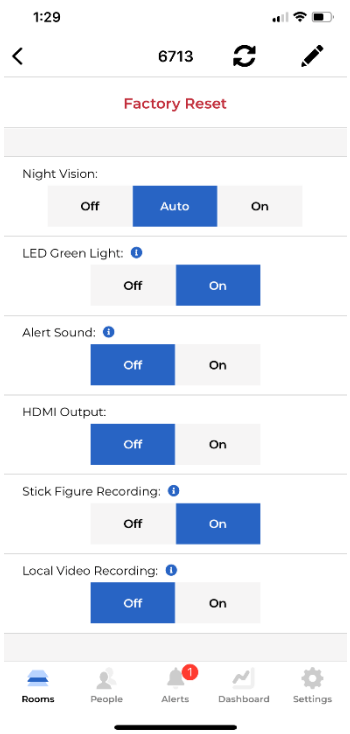
Note that increasing the sensitivity also increase the chance of false alarm, which can be managed via the Manage False Alert page in Sec. 6.

After a waving hand alert is generated, the sensor will not send the same alert in the next 15 seconds.

4.2.16 Advanced Settings

At the bottom of the device page, tap the “Show Advanced Settings” command will display further information, as shown below, including length of stick figure recording, serial number, last connect time, IP address, and MAC address, and some toggle switches. After that, the command will change to “Hide Advanced Settings”. Tap this will hide the advanced settings.





4.2.17 Factory Reset

In some rare cases, if the sensor fails to operate properly, a factory reset might be needed, which can be done in the App, or manually via the reset hole in the back of the Cypress sensor, or the reset button at the top of the Sentinare 2 sensor.

1) Factory Reset via the App

If the sensor can be connected to the App via Bluetooth, the factory reset can be done via the App by selecting the Factory Reset command in the advanced setting of the sensor page. This is convenient when the sensor is installed at a high position that is not easy to access.

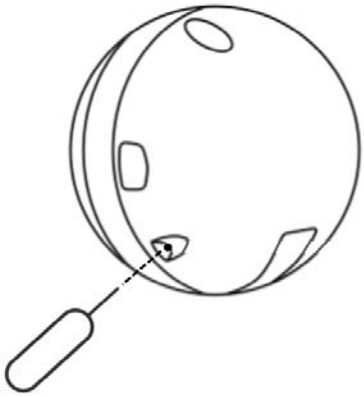
For the Cypress sensor, the reset process takes about 2 minutes, during which the sensor's LED will change to flashing green, flashing white, solid white (rebooting), and finally flashing white, signaling that it is ready to be added to an account. Some firmware versions might need multiple reboots. Please do NOT unplug its power until the sensor is fully reset after two minutes, and the LED becomes flashing white light. After the factory reset, the sensor's firmware will revert to the initial version, all user data will be erased from the sensor, and the sensor will be removed from the current account. It can then be added to any account, after which the firmware needed to be upgraded.

For the Sentinare 2 sensor, the reset process only takes about one minute, during which the sensor's LED will change to flashing green, flashing white, red, solid white (rebooting), and finally flashing white, signaling that it is ready to be added to an account. Please do NOT unplug its power until the sensor is fully reset after one minute, and the LED becomes flashing white light again. Different from the Cypress sensor, factory reset does not change the firmware version of Sentinare 2, so it does not need to be upgraded, unless a new firmware version is available, but the sensor will be removed from the account. It can then be added to any account.

2) Physical Factory Reset

If the App cannot be connected to the sensor via Bluetooth, a physical factory reset is needed.

For the Cypress sensor, in the back of the sensor, there is a reset hole next to the SD card slot, as shown below. To perform the physical factory reset, insert a pin into the hole (from lower left to upper right direction, or 45 degree), gently press the reset button inside the sensor, and hold it for about 8 seconds, until the LED light becomes purple. After that, the sensor will reboot, and the LED will become solid white for about a minute, and will then become flashing white, signaling that it is ready to receive command from the App. Some firmware versions might need multiple reboots during the factory reset.



For Sentinare 2 sensor, the reset button at the top of the sensor is needed to perform the physical factory reset. The procedure is as follows:

1. Unplug the power of the sensor
2. Plug in the power of the sensor
3. After the LED light becomes white, press the reset button within 3 seconds, the LED will become red immediately, then release the button

After these steps, the sensor will reboot. The LED will first become solid white, and then turn into flashing white, signaling that the sensor is ready to receive command from the App.

3) Switching to Previous Firmware Version (Sentinare 2 sensor only)

The Sentinare 2 has another factory reset feature, which allows the firmware to switch to the previous version. This should only be needed if you are sure that the current firmware version is corrupted and does not work even after the factory reset described above. Note that sometimes you may also need to downgrade your App to the previous version that matches the previous firmware version.

To do this, in Step 3 of the factory reset prcedure above, after the LED light becomes white, press and hold the reset button within 3 seconds, and continue to hold the button for about 10 seconds. The LED will first become red, and then become purple. After this, release the button. The sensor will switch back to the previous firmware version.

4) After Factory Reset

For both Cypress and Sentinare 2 sensors, after the physical reset, the sensor still belongs to its previous account in the App, but the status will become offline. If the sensor needs to stay in the same account, users only need to set up the WiFi of the sensor again via the App, and then do the calibration. If the sensor needs to be added to another account, the previous account owner should first remove the device from the previous account via the App, either before or after the physical reset. Otherwise when the new account owner tries to add the sensor to the new account, an error message will be displayed, stating that the device belongs to another account., The new user can email the current owner to remove the sensor from their account, as discussed in Sec. 4.1.1. If you could not contact the previous owner, please send an email to contact@altumview.com, and let us know the serial number of the sensor. We will remove the previous record from the server. You can then add it to your account.

4.2.18 Configuring Night Vision

In the Advanced Setting, there is a toggle switch to control the night vision feature, including turning on, turning off, and using automatic mode.

4.2.19 LED Green Light

For Cypress sensor, this toggle controls if the sensor will display a steady green light when it is in the normal working condition. It does not affect the sensor to use LED to indicate other special statuses.

4.2.20 Alert Sound

When the Alert Sound flag is On, the sensor will play a sound when sending an alert, otherwise it will not play a sound when sending an alert.

4.2.21 Stick Figure Recording

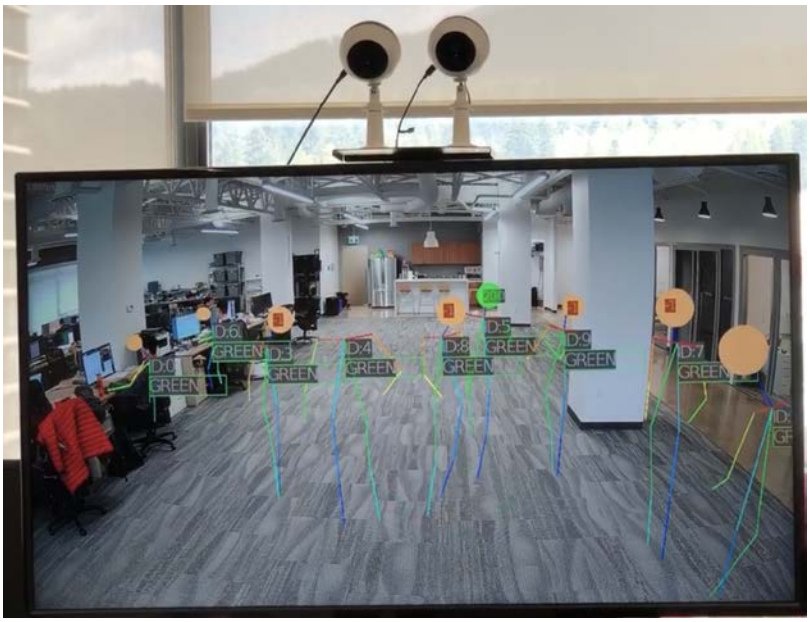
This toggle is used to turn on (default) or turn off the stick figure recording in the server. When the toggle is on, whenever a person is detected by a sensor, the stick figure activities will be recorded in the server. The recording can be accessed from the View Recordings page, as described in Sec. 4.2.7.

4.2.22 HDMI Output (Cypress Only)

Some Cypress sensors have HDMI output, which can be used to display the background image and stick figures on big screen TV. This is very useful for demo purpose.

For these sensors with HDMI output, the Advanced Setting includes a “HDMI Output” toggle switch, which can be used to turn on or off the HDMI output port of the activity sensor. The default value is Off. The change of “HDMI output” will restart the device to make the change effective.

The display device required by HDMI output is 1080P resolution and 60 frame/sec.



4.2.23 Local Video Recording (Cypress Only)

The Cypress sensor has a SD card slot. The supported format is: SDHC, FAT32 file system, up to 32GB, Class 10, UHS Level U1/U3. When inserting the SD card, the metal pin side of the card should face the back of the sensor.

In the Advanced Setting, there is a toggle switch to turn on and off people-triggered recording. When the toggle is ON, whenever a person is detected by the sensor, a video clip will be saved to the SD card of the sensor. If the toggle is OFF (default), a video clip is only saved in the SD card when an alert or presumptive alert event is detected. If no SD card is inserted in the SD card slot, no video will be recorded.

For privacy and security reasons, the videos in the SD card are not transmitted out of the sensor, and can only be accessed by taking the card out of the sensor and copy the files to a computer.

The videos saved in the SD card can be very useful to analyze the incidents so that future incidents can be avoided, or as an evidence for legal purpose.

The videos in the SD card are encoded by the H.264 standard, and can be played by many video players such as the VLC Player (https://www.videolan.org). The time stamp of the videos is in UTC time, a successor to the Greenwich Mean Time (GMT).

4.2.24 Meanings of LED Colors

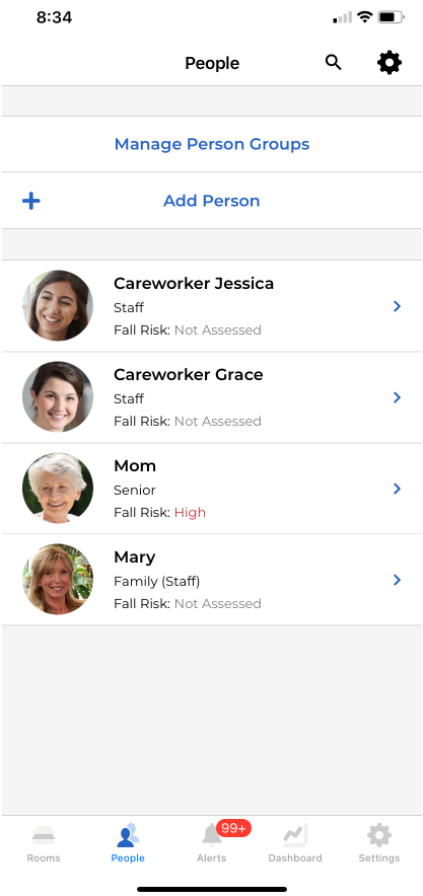
Different LED colors indicate different statuses of the device, as summarized below.

- Steady white: Device is starting. Please wait
- Flashing white: Ready to access to the network
- Flashing green: Device is connecting to the phone App via Bluetooth
- Steady green: the sensor is in normal working condition
- Steady red: Connecting to Wi-Fi
- Flashing yellow：Connecting to server
- Steady yellow: Cannot connect to server
- Flashing cyan: An audio call is going on
- Blue：Communicating with the phone via Bluetooth or is downloading files from the server
- Purple: Restoring factory settings, or sending an alert
- Flashing red: 1) When Delay Fall Alert flag is ON, if a fall is detected, the sensor will flash red for 30 seconds before sending an alert. 2) If a waving hand is detected, the sensor will flash red for a few seconds before sending the alert. 3) Wrong Wi-Fi password is entered when the sensor is trying to connect to a Wi-Fi

5. People Management

Tap on "People" at the bottom of the page to enter the "People" page. This page can define Person Group, add persons to the account (such as seniors, family members, and care workers), enter information of each person, and perform Fall Risk Assessment for a person.

The summary of numbers of people in different groups can be viewed in the Dashboard page (Sec. 8).



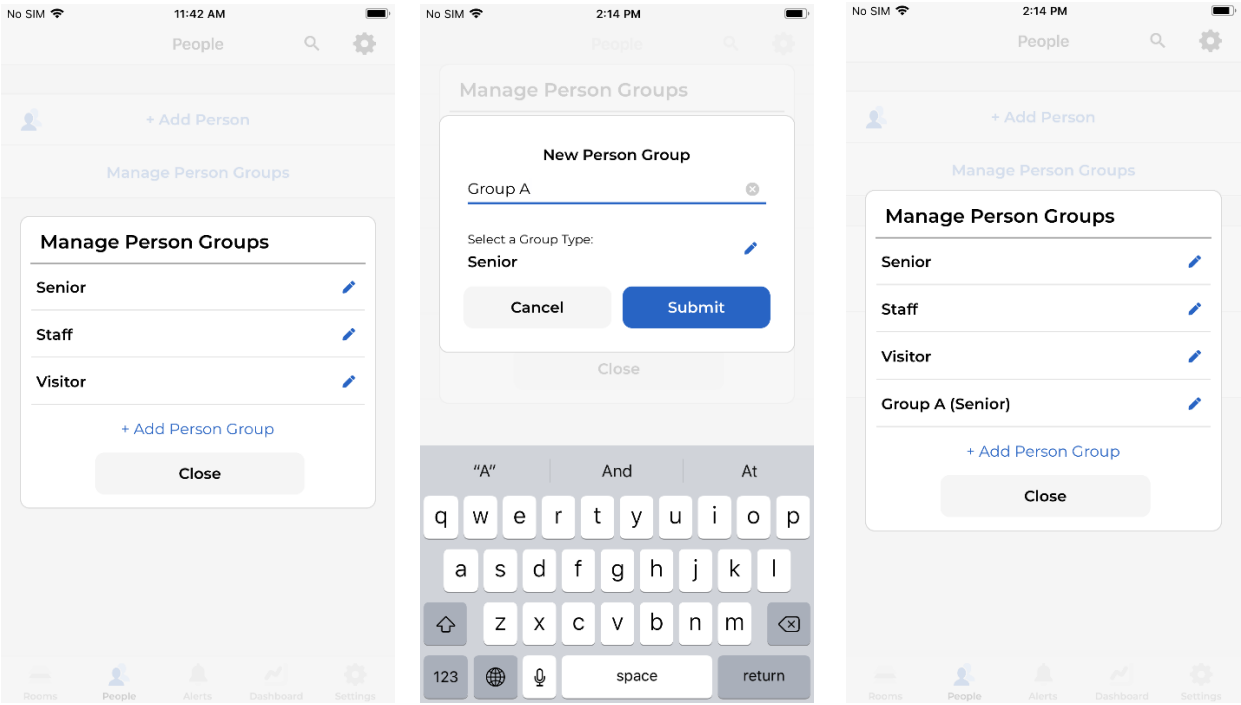
5.1. Manage Person Groups

To facilitate people management, the system allows users to define different Person Groups. Each person must be assigned to a person group.

User can see all the existing person groups by tapping the “Manage Person Groups”. By default, three person groups are pre-defined: Senior, Staff, and Visitor.

In the Manager Person Groups page, user can add a new person group by tapping the “+ Add Person Group” command. In the New Person Group page, user can specify the name of the new person group and the type of the person group. Currently, only three types are supported, namely Senior, Staff, and Visitors. Each of the three pre-defined person groups belong to one of the three person group types.

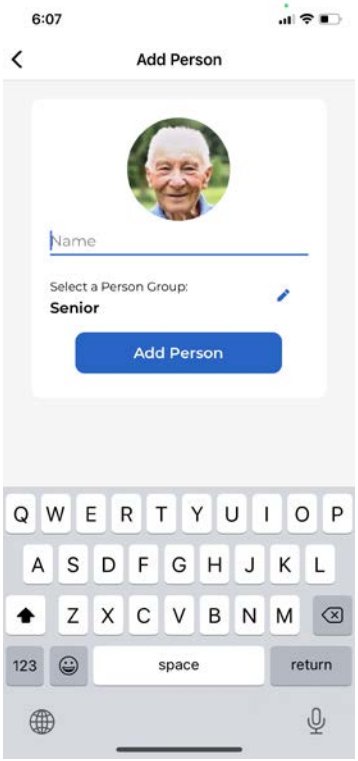
Only the administrator can manage Person Group.



5.2. Add Person

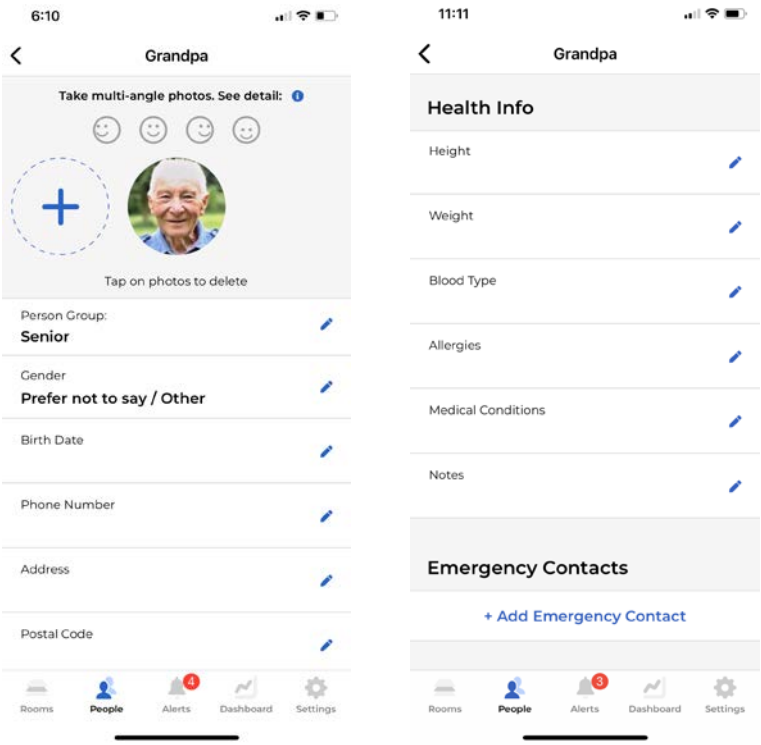
Only administrators can add new person. To add a person, tap on "+Add Person" at the top of the “People” page. The App first needs to get a front image of the person from the camera or from the image library, as shown by the figure below. Please make sure the entire head of the person is in the circle.

After getting a face image, the “Add Person” page will appear, where the user can input the name of the person and assign this person to a person group, as shown below.



In the next page, users can add or delete photos for the person. In order to improve the face recognition performance, it is recommended that each person provides four photos: front view, left and right 45-degree side views, and 30 degree top-down view. Make sure the pictures are clear, and no other people are in the view. To add a photo, users can tap on the “+” icon. To delete a photo, simply tap on the photo, but everyone must have at least one photo. Only administrators can delete photos.

In this page, users can change the person’s group, and input the person’s detailed information, such as age, gender, address, and phone number. For persons in the Senior group, users can also input the health information and emergency contact.

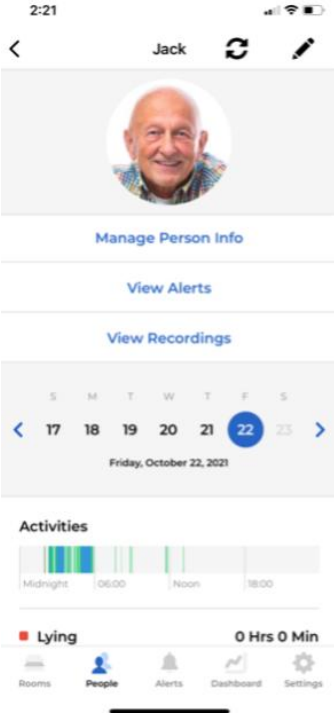


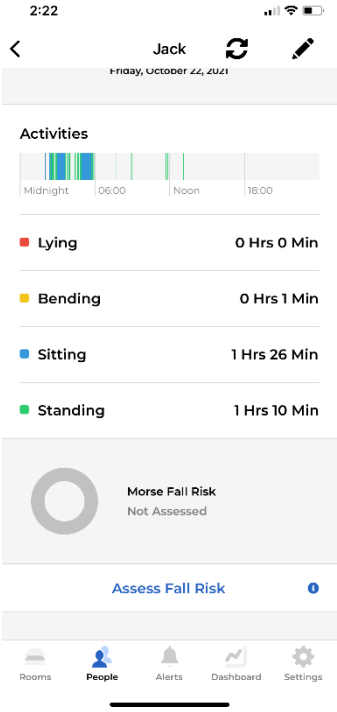
5.3 Person Information

In the list of people, tap on a person will enter the person's page as shown below.

On the top of the person page, users can delete the person or rename the person by clicking the pen icon. All users can rename a person, but only administrator can delete a person. The person's name is cached in the App, so after a person is deleted, the App can still display the person's name in the streaming page, until the App is restarted.

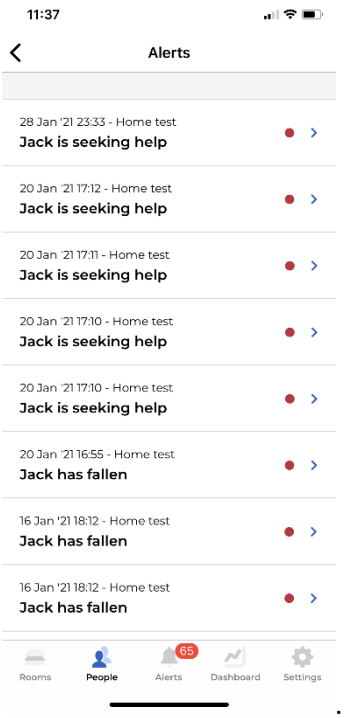
Tap on the "Manage Person Info" command under the person's photo will open a person information page, user can add or remove the person's pictures, add some person's information, such as person's group, phone number, address, and health information, including more than 30 typical chronic medical conditions.

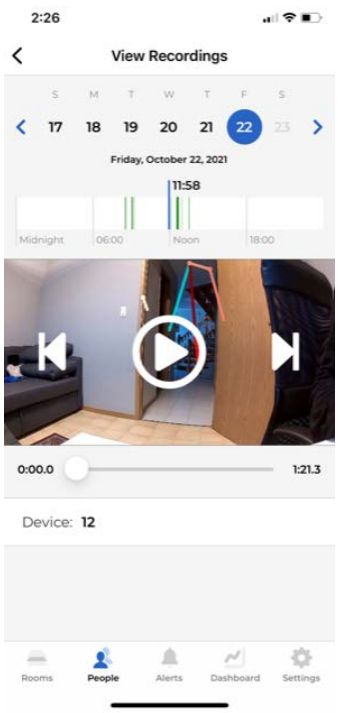




Tap on the “View Alerts” command will enter a page that will list all the alerts of the person, as shown in the left figure below. Tap on an alert record will see the details of that record, as shown in the next chapter.

Tap on the “View Recordings” command will enter the View Recordings page, where user can replay the skeleton recordings of this person, as described in Sec. 4.





Users can select a day in the calendar to check the activity statistics of the person in that day, including the time spent on different activities such as lying, bending, sitting, and standing.

In the people page, users can also perform Fall Risk Assessment, which will be described in Sec. 7. The pervious fall risk assessment result will also be shown here, if any.

6. Alerts

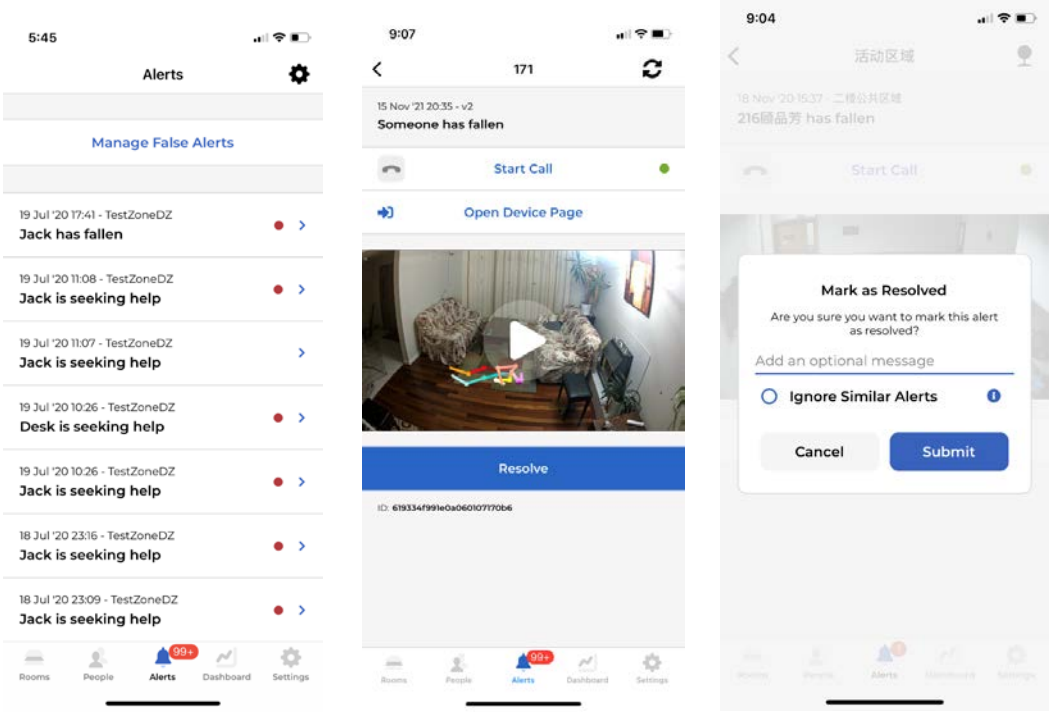
6.1 Alerts

When the device detects abnormal events such as falls, waving hands, and people with wandering risk entering a restricted region, it will automatically send an alarm to the mobile APP via the cloud. If the App is closed and notification is enabled, the phone will play a sound when the alert is received. If the App is open, a pop-up window will be displayed.

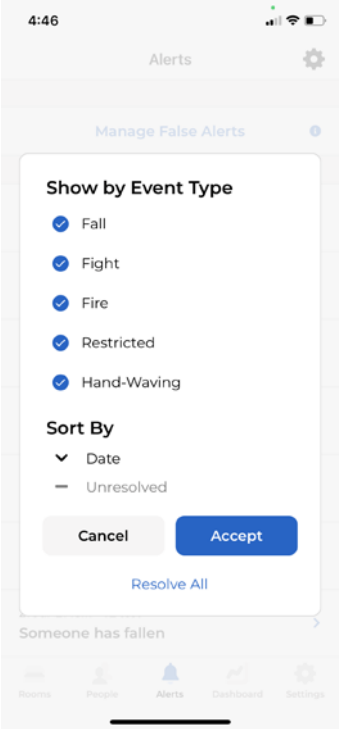
Tapping the Alerts button at the bottom of the page will show the list of all alerts. Each alert page will show the time, room, and stick-figure animation of the corresponding event. Sometimes users need to press and pull down the screen to refresh the list and display the latest alerts.

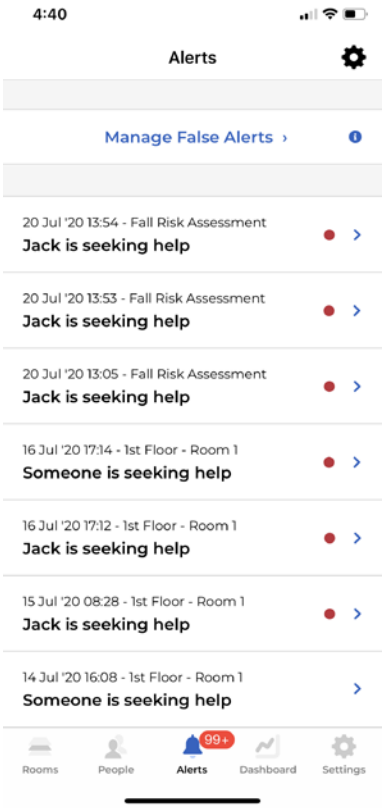
After an alert is received, users can use the Start Call command in the alert page to talk to the person, or click the Open Device Page command to go to the streaming page of the sensor directly, to double check what is going on.

To resolve an alert, tap on the "Resolve" button. In the next Mark as Resolved page, users can enter some descriptions of the event, choose to ignore similar alerts in the future (see Section 6.2), and submit it. After this, the state of the event in the alert record will become "Resolved" with the red dot removed.



Tap on the Setting icon in the upper right corner of the alert list page, user can search and sort all alerts, as shown by the first figure below. The second figure shows the results by only showing the fall alerts. Tap the “Clear filters” button to clear the display of the sorting, and return to the full list.





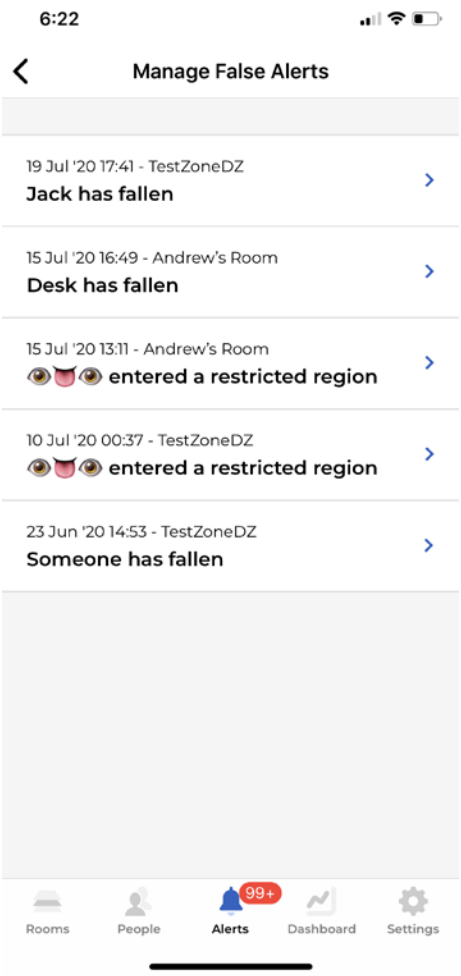
6.2 Managing False Alarms

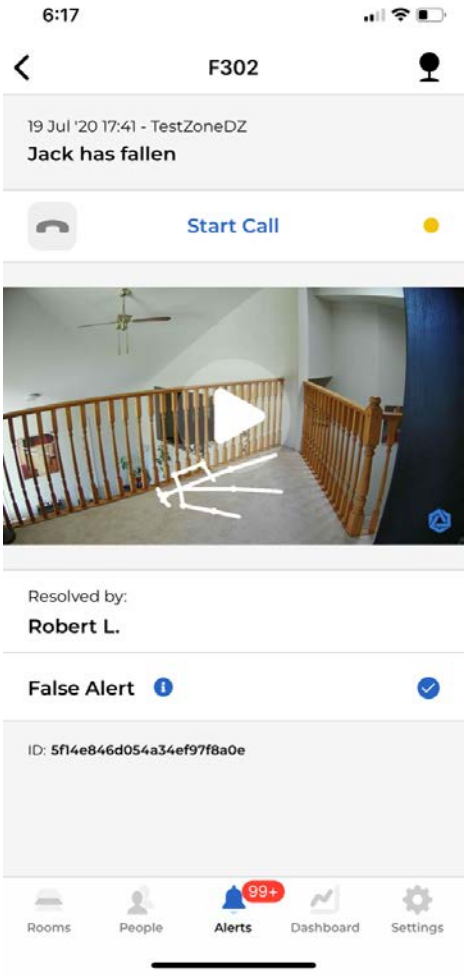
Sometimes the alerts generated by the sensor are false alarms. For example, a plant or other objects could be detected as a human and even trigger fall or waving hand alerts.

If one type of false alarm frequently happens at the SAME location, users can choose the Ignore Similar Alerts option in the Mark as Resolved page. After that, the server will not send the same type of alerts from the same location.

Alerts marked as false alarms this way will be moved to the Manage False Alerts page. Tap the Manage False Alerts in the Alerts page will list all false alarms.

When the sensor’s position is changed, false alerts marked in its previous positions should be removed. To do this, tap the alert, and uncheck the False Alarm flag in the alert detail page. The alert will be moved back to the list of alerts in the Alerts page.


6:22
Manage False Alerts
19 Jul '20 17:41 - TestZoneDZ
Jack has fallen
15 Jul '20 16:49 - Andrew's Room
Desk has fallen
15 Jul '20 13:11 - Andrew's Room
entered a restricted region
10 Jul '20 00:37 - TestZoneDZ
entered a restricted region
23 Jun '20 14:53 - TestZoneDZ
Someone has fallen
99+
Rooms
People
Alerts
Dashboard
Settings


6:17
F302
19 Jul '20 17:41 - TestZoneDZ
Jack has fallen
Start Call
Resolved by:
Robert L.
False Alert
ID: 5f14e846d054a34ef97f8a0e
99+
Rooms
People
Alerts
Dashboard
Settings

7. Fall Risk Assessment

7.1 Introduction

The Sentinare activity sensor can also perform fall risk assessment. This allows users to evaluate the fall risk of seniors or patients regularly in long-term care facilities, community centres, or at homes, without having to go to hospitals to do the test, and identify people with high fall risk earlier, so that necessary interventions can be taken to reduce falls and the damages they could cause.

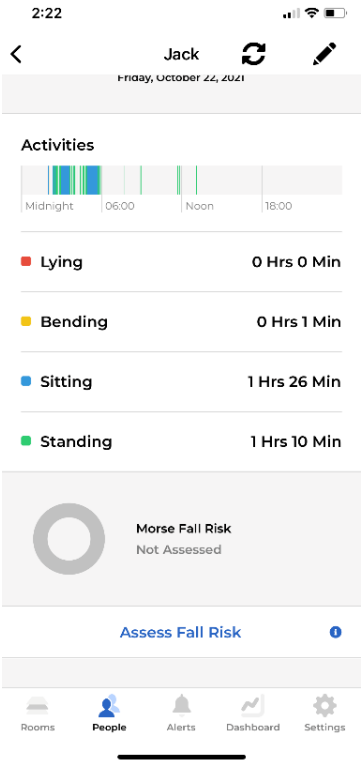
The method implemented by the Sentinare activity sensor is based on the widely used Morse Fall Risk Assessment Scale, which assign scores to the following six factors, and the total score is used to determine the fall risk.

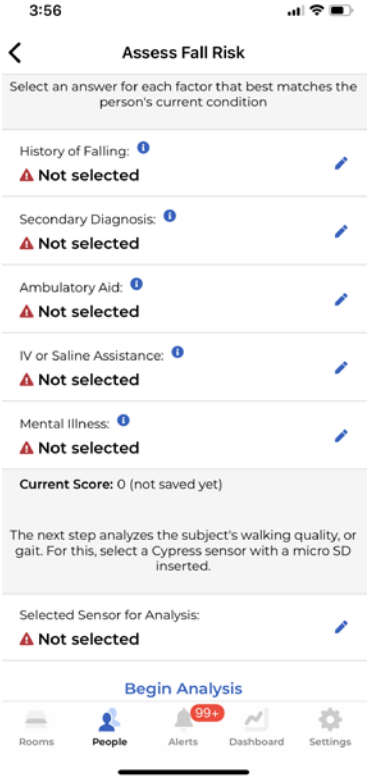
- History of falling in the last 3 months
- Secondary diagnosis
- Ambulatory aid
- IV or saline assistance
- Mental illness
- Gait quality

The Morse method's average sensitivity and specificity is over 80%, and interrater reliability is 0.96, meaning repeated tests by different examiners are highly consistent. Therefore the method has been widely adopted around the world.

7.2 Morse Fall Risk Assessment Scale

To perform fall risk assessment for a person, tap the Peoples icon in the bottom of the screen, and select the person in the list of people. In the person's individual page, tap the Assess Fall Risk button to go to the Assess Fall Risk page, as shown below.





In the Assess Fall Risk page, users first need to answer 5 questions about the health conditions of the person being tested. The questions and rules of scores are as follows. These details can also be found in the App by tapping the information icon next to each question.

1: History of falling in the last 3 months:

- 25: if the patient has immediate history of falls within the past 3 months.
- 0: Otherwise.

2: Secondary diagnosis:

- 15: If **<u>two or more</u>** medical diagnoses are listed on the patient's record that may increase risk for falls, considering factors such as illness/medication timing and side effects such as dizziness, frequent urination, unsteadiness.
- 0: Otherwise.

3: Ambulatory aid:

- 0: If the patient walks without a walking aid (even if assisted by a nurse), uses a wheelchair, or is on bed rest and does not get out of bed at all.
- 15: If the patient uses crutches, a cane, or a walker.

- 30: If the patient walks clutching onto wall or furniture for support (e.g., needs help, but does not ask or does not comply with order for bed rest).

4: IV or saline assistance:

- 20: if the patient has an intravenous apparatus or is attached to other medical equipment.
- 0: Otherwise.

5: Mental illness:

To test mental status, ask the patients "Are you able to go to the bathroom alone or do you need assistance?". The score will be

- 0: If the patient's reply is consistent with the hospital/facility's record.
- 15: If the patient's response is not consistent with the record, or if the patient's response is unrealistic.

7.3 Gait Analysis

The last step of the Morse Fall Risk Scale is to assess the gait or walking quality of the person. Sentinare activity sensor performs this through the popular 3m Timed Up & Go (TUG) test, which was initially designed for seniors, but has also been found to be accurate for people with Parkinson's Disease, Alzheimer's, hip fracture, routine orthopaedic surgery, and other conditions. The TUG method's average sensitivity and specificity is also over 80%, and interrater reliability is 0.98.

7.3.1 Room Setup

To do the gait analysis, users need to select a room with a Cypress or Sentinare 2 sensor and an empty area of at least 3m long, and ensure that the entire test area can be captured by the sensor. In the future, we will add a feature to play back the recordings of all historical fall risk assessments. Please do the following preparation:

- Place an armchair in the room.
- Place a marker (such as a colored tape) 3m away on the floor in front of the chair.

The person doing the test can wear their regular footwear and can use a walking aid, if needed. If necessary, another person can accompany the senior during the test to prevent them from falling.

7.3.2 The Gait Test

The person being evaluated will start from the sitting position in the chair, and place his/her back against the chair and rest his/her arms on the chair's arms.

The App user taps the **Start** button on the App, and the person being evaluated will start to do the following.

1: Stand up from the chair.

2: Walk to the marker on the floor at a comfortable and safe speed.

3: Turn around.

4: Walk back to the chair.

5: Sit down again.

After the person sits back to the chair, the App user taps the **Stop** button in the App.

One practice walk is allowed.

Next, tap the Submit button in the app, the gait score and the total score of the Morse Fall risk Scale will be displayed in the App.

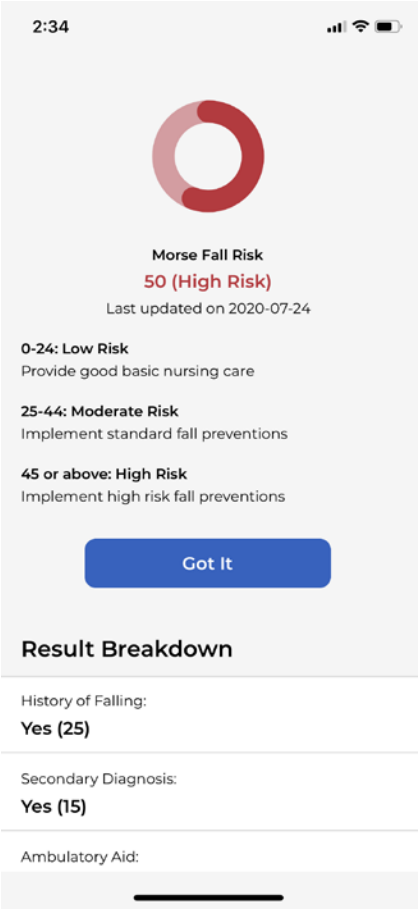
Based on the person's gait analysis, the sensor will give the person's gait score as follows:

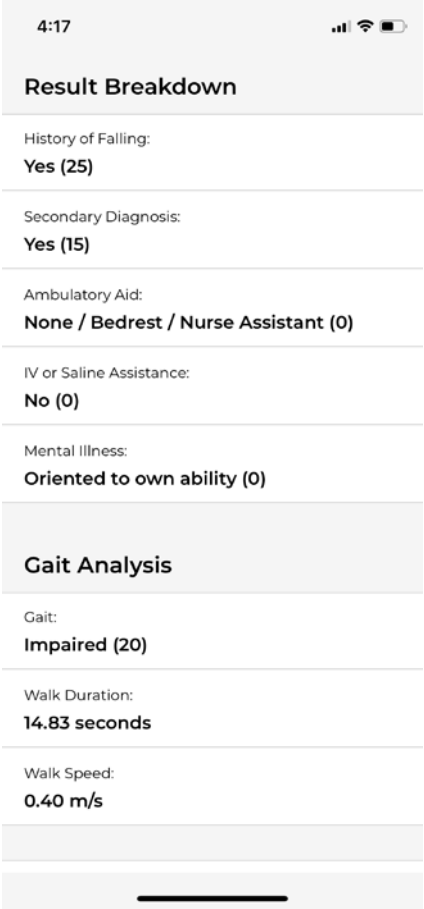
- 0: Normal gait (or if the person is always on bed rest or on wheelchair)
- 30: Weak gait
- 45: Impaired gait

7.4 Final Morse Fall Risk Scale

The final Morse fall risk scale classifies the total score from the six parts above into three categories:

- Low Risk: 0-24
  - Only need to provide good basic care
- Moderate Risk: 25-44
  - Need to implement standard fall prevention interventions
- High Risk: >=45
  - Need to implement high risk fall prevention interventions


2:34
Morse Fall Risk
50 (High Risk)
Last updated on 2020-07-24
0-24: Low Risk
Provide good basic nursing care
25-44: Moderate Risk
Implement standard fall preventions
45 or above: High Risk
Implement high risk fall preventions
Got It
Result Breakdown
History of Falling:
Yes (25)
Secondary Diagnosis:
Yes (15)
Ambulatory Aid:


4:17
Result Breakdown
History of Falling:
Yes (25)
Secondary Diagnosis:
Yes (15)
Ambulatory Aid:
None / Bedrest / Nurse Assistant (0)
IV or Saline Assistance:
No (0)
Mental Illness:
Oriented to own ability (0)
Gait Analysis
Gait:
Impaired (20)
Walk Duration:
14.83 seconds
Walk Speed:
0.40 m/s

8. Dashboard

Tap on “Dashboard” in the menu at the bottom of the screen to view some statistics about this account, as shown below.

The first part of the dashboard shows the visit records, which is explained in Sec. 8.1.

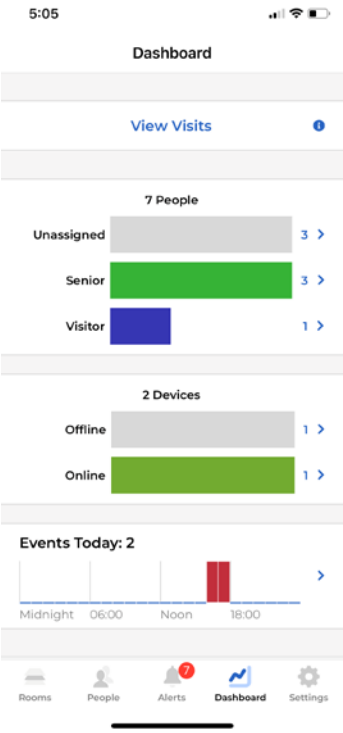
The dashboard page first displays the total number of people in the account, including the total in each person group. Tapping the name of each person group will show the list of all people in it.

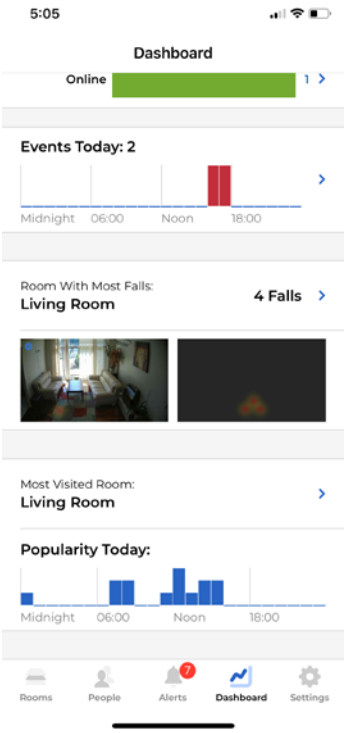
The next part displays the total number of devices in the account, and the numbers of online and offline devices. Tapping the offline and online categories will show the list in each group.

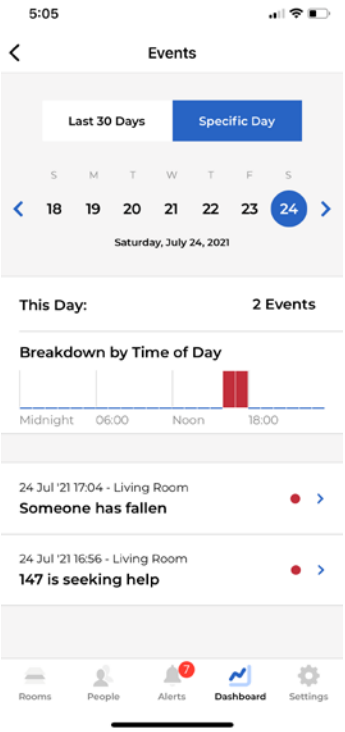
The next part shows the total number of events and the time of each event in the current day. Tapping this part of the screen will show the details of these events. In this page, users can also check the records of other days or the total records of the last 30 days.

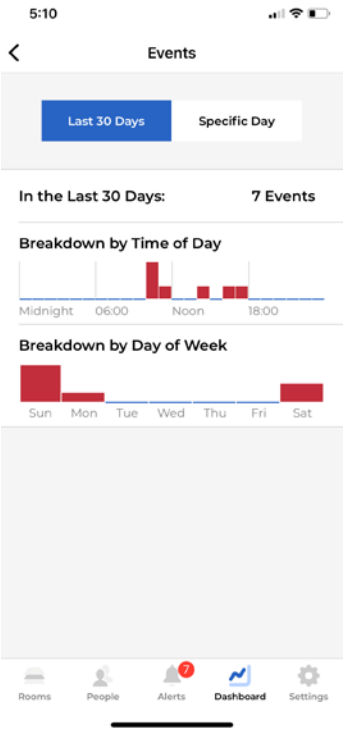
The next part of the dashboard page shows the room with most falls, and the heat maps of the fall locations.

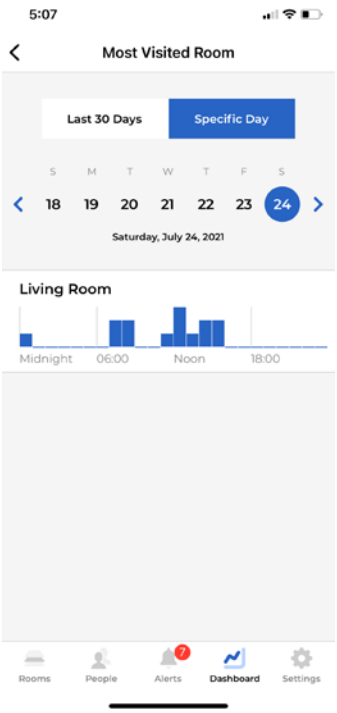
The bottom of the dashboard page displays the most visited room today. Tapping this part of the screen, users can check the most visited room in other days or the last 30 days.

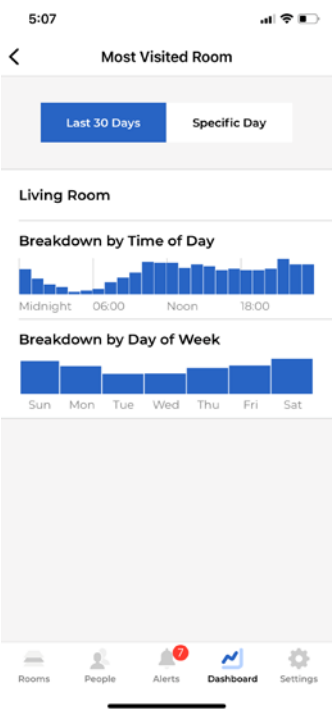





5:05
Events
Last 30 Days
Specific Day
S M T W T F S
18 19 20 21 22 23 24
Saturday, July 24, 2021
This Day:
2 Events
Breakdown by Time of Day
Midnight 06:00 Noon 18:00
24 Jul '21 17:04 - Living Room
Someone has fallen
24 Jul '21 16:56 - Living Room
147 is seeking help
Rooms People Alerts Dashboard Settings


5:10
Events
Last 30 Days
Specific Day
In the Last 30 Days:
7 Events
Breakdown by Time of Day
Midnight 06:00 Noon 18:00
Breakdown by Day of Week
Sun Mon Tue Wed Thu Fri Sat
Rooms People Alerts Dashboard Settings


5:07
Most Visited Room
Last 30 Days
Specific Day
S M T W T F S
18 19 20 21 22 23 24
Saturday, July 24, 2021
Living Room
Midnight 06:00 Noon 18:00
Rooms People Alerts Dashboard Settings

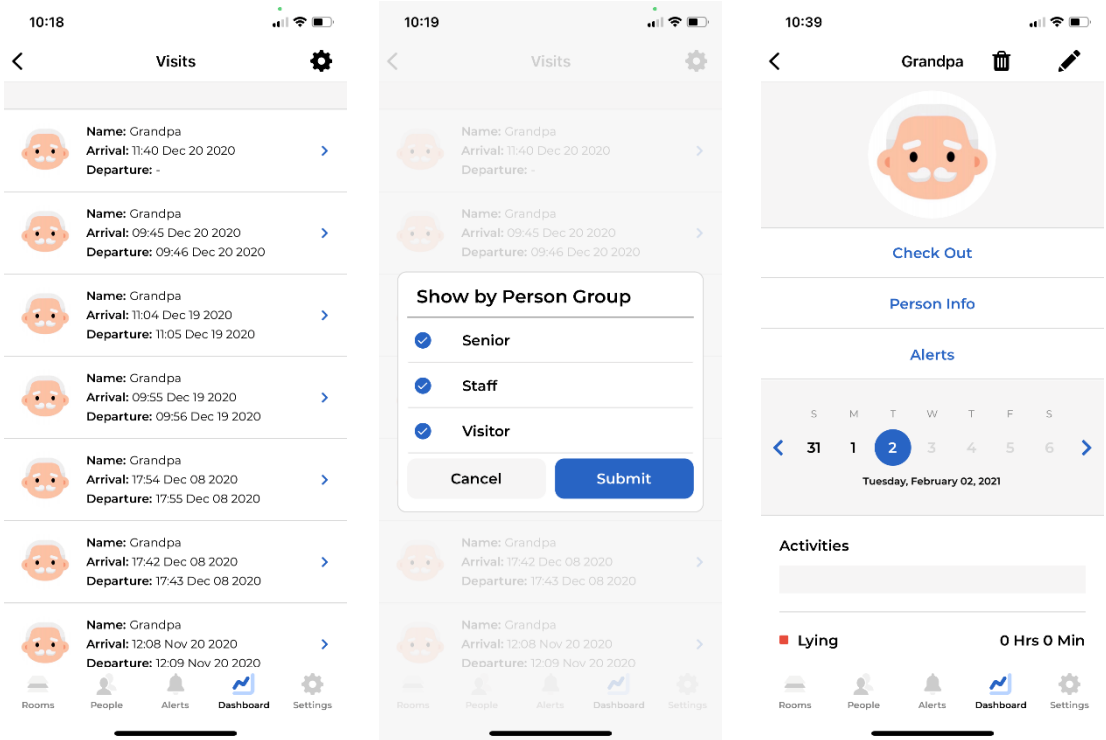

5:07
Most Visited Room
Last 30 Days
Specific Day
Living Room
Breakdown by Time of Day
Midnight 06:00 Noon 18:00
Breakdown by Day of Week
Sun Mon Tue Wed Thu Fri Sat
Rooms People Alerts Dashboard Settings

8.1 View Visits

Tap on the “View Visits” command will enter the “Visits” page, which shows all the entrance and/or exit records detected by sensors for which the entrance and/or exit are defined via the Region of Interest page in Sec. 4.

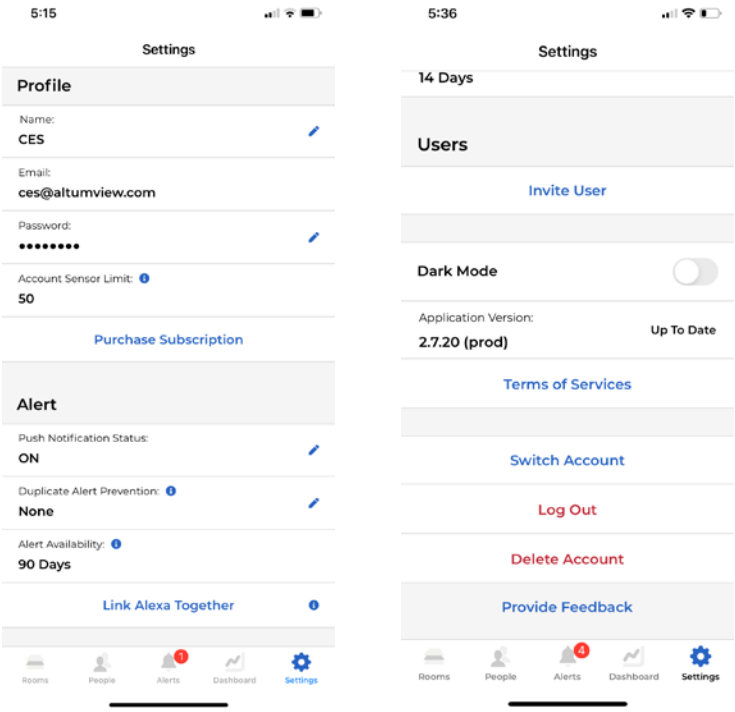
In the Visits page, tap on the setting icon in the upper right corner, users can select what person group’s records to display, as shown by the figure below. The filtering can be removed by tapping “Clear Filters”.

From the Visits page, users can also manually check out a person, if his/her departure time was not recorded for some reasons. This can be done by tapping a record whose departure time has not been logged. In the next page, tap the “Check Out” command, as shown by the following figure, a pop up window will show up for users to input the departure time of the person.



9. Account Settings

Tap on "Settings" in the bottom right corner to enter the account setting page.



9.1 Profile

In the Profile section, the name, email address and password of a user can be changed. The maximal number of devices that can be added to the account is also displayed. The default is 3 for the Free Plan. Please subscribe to our paid plans below if if you need to increase the limit.

9.2 Purchase Subscription

Click the “Purchase Subscription” button will open the Purchase Subscription page. Currently, three plans are offered:

1. Free Basic Plan (default):

It provides 3 days of continuous stick figure recording, 14 days of alert history & playback, 14 days of person activity statistics, up to 3 sensors in the account, and does not have the capability of inviting secondary user. This is suitable for most consumer users.

2: Home Plan (Paid):

It provides 90 days of continuous stick figure recording, 90 days of alert history & playback, 90 days of person activity statistics, up to 10 sensors in the account, and can invite secondary user. The cost is US$9.99/month/account, paid via user's Apple or Google account. This is suitable for some individual consumers or small businesses who have 4-10 sensors, need to access long-term data, and invite secondary users.

3: Enterprise Plan (Paid):

This is for businesses or institutions requiring a large number of sensors, API integration, or more technical support. Please contact our sales team for a custom solution, or email to contact@altumview.com. We will change the relevant parameters in the server, including number of sensors, days of stick figure recording, and days of alert and statistics history.

9.3 Push Notification Status

Sentinare activity sensor can detect abnormal events like falls and send alerts to user's mobile device immediately. However, to take full advantage of this feature, the user needs to enable the Sentinare App to receive such notifications via notification banner and sound at the System Setting of their device. This can be turned on and off by the "Push Notification Status" command in the Sentinare setting page.

9.4 Duplicate Alert Prevention

The "Duplicate Alert Prevention" setting is used to prevent frequent alerts from a room. The value can be changed by tapping the pencil icon to the right of "Duplicate Alert Prevention". When the setting is None, all alerts generated from the sensors in a room will be sent to the cloud and the App. When the setting is not None, for example, 2 hours, only one possible alert will be generated in every 2 hours for each room. This can reduce the false alarms. **The default value of "Duplicate Alert Prevention" is "None".**

Only the administrator can change the value of the "Duplicate Alert Prevention" setting.

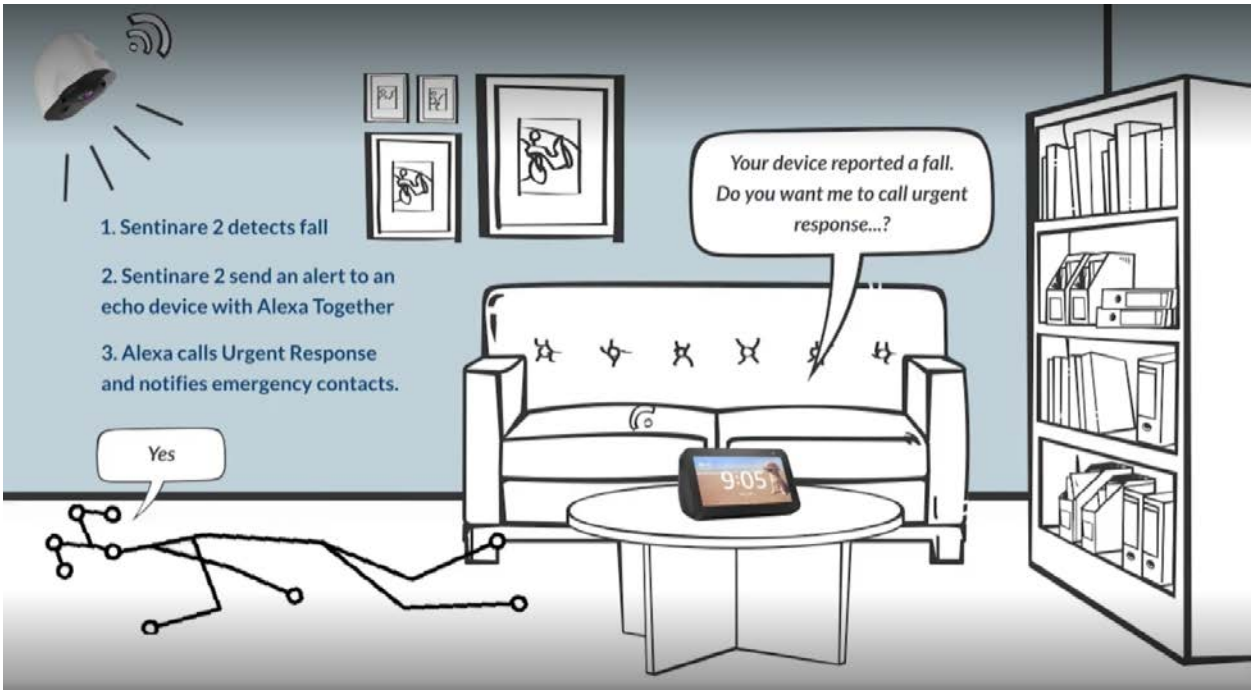
9.5 Alert History

The mobile App can store 14 days of historical alert data. Please contact us if you need to increase the limit.

9.6 Link Alexa Together (US Server Only)

Alexa Together is a new service launched by Amazon to help seniors, especially those living alone, with 24/7 emergency response. It is a paid service currently only available in the United States. Alexa Together is based on the Alexa smart speaker and certified third-party fall detection devices. AltumView's Sentinare sensor has been selected by Amazon to integrate into Alexa Together (available from April 2022).

When the Sentinare sensor detects a fall, it will send a message to the Alexa, and the Alexa speaker will talk to the person if they have fallen and if they need any help. If the person answers Yes, a 24x7-available human operator will call the person to provide emergency support.



To use the Sentinare sensor with the Alexa Together service, users first need to subscribe to the Alexa Together service from their Alexa accounts. Please refer to Alexa Together website for details.

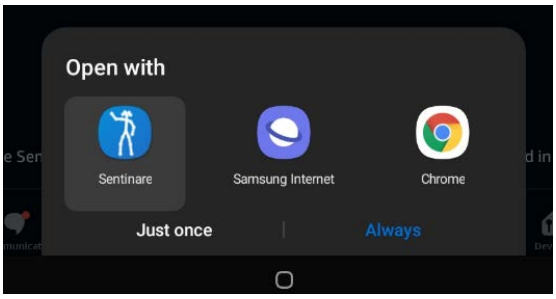
The next step is to link a Sentinare account and an Alexa account. This can be done in one of two ways.

1: App-to-app linking (Starting from the Sentinare app)

This is the recommended linking method, because it is a lot easier than the second method. When both the Alexa app and the Sentinare app are installed on the same phone, the linking can be done as follows:

1. Log in to the Alexa app using an Alexa account with the Alexa Together subscription.
2. Switch to the Sentinare app, go to the Setting page, click Link Alexa Together. In the next instruction page, click “Link with Alexa”.
3. In the next Account Linking page, click Link. Sentinare app will link to your Alexa account automatically. After the linking is complete, a Link Successful page will be displayed.

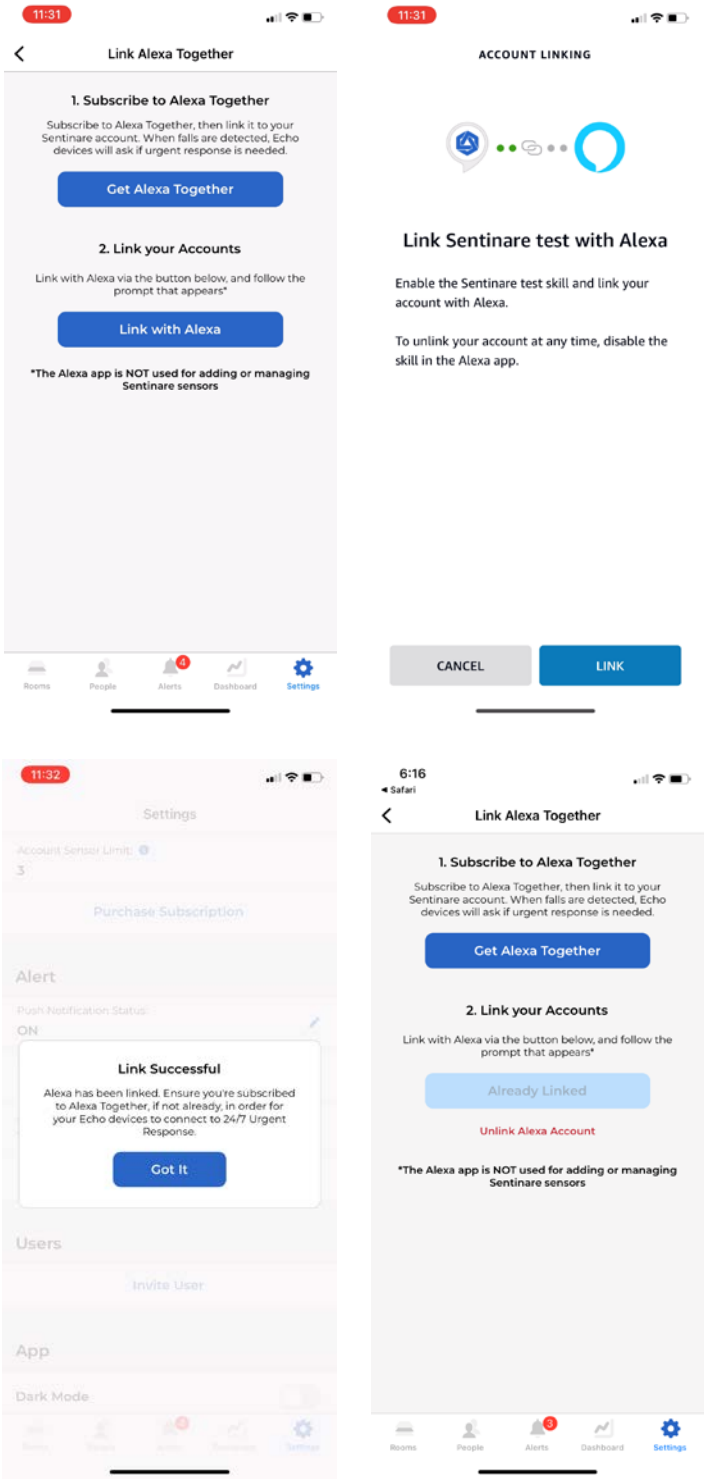
Note: For Android devices, after the linking is established, an “Open with” window will pop up, as shown below, and ask the users to choose which app to use to open the Sentinare link. Please choose Sentinare from the list of apps (including some web browsers), then tap the “Always” command. After that, the linking successful window will be displayed.



If you accidently chose another app (such as Chrome) to open the link, you will see an Access Denied error in the browser for the link resource.altumview.com. To resolve the problem, you can clear the “Open by Default” setting of the other app from the Setting page of the Android device. The detailed operations are slightly different on different Android devices. For example, for Samsung tablets, this can be done by going to the Settings/Apps/Choose default apps/Opening Links page, wait for all installed apps to be displayed, and then select the other app you chose before, such as Chrome, then select “Clear defaults”. After that, you can redo the linking step from Sentinare. Please refer to the following link for more details.
https://www.makeuseof.com/tag/remove-change-set-default-apps-android/

After the linking is successful, the “Link with Alexa” command will change to “Already Linked”. When falls are detected by the Sentinare sensor, the Alexa speaker will be notified, and will ask if the people needs any help.

After the linking is successful, a “Unlink Alexa Account” command will also appear in the “Link Alexa Together” page. Click it will unlink Sentinare and Alexa accounts.



The link between a Sentinare account and an Alexa account can still be established if only the Sentinare app is installed on the phone, and the Alexa app is not installed. In this case, after user clicks the “Link with Alexa” command in the Sentinare app, the Sentinare app will open a web browser for user to log in

to their Alexa account. After that, the link will be established automatically, the browser will be closed, and the Link Successful page above will be displayed.

2: Enabling the Sentinare Skill from Alexa app

This standard enabling skill approach for Alexa app needs more steps and is NOT recommended to link to the Sentinare app.

- Log in to the Sentinare app.
- Switch to the Alexa app.
- Search for the skill “Sentinare by AltumView”.
- Click “ENABLE TO USE”. The Alexa app will open the login page of the Sentinare website. Enter your Sentinare account name and password, accept the grant access.
- After the linking is successful, your phone will receive a push notification from the Sentinare app, which will tell you to skip the device discovery step in the Alexa app.
- Skip the device discovery in the Alexa app. Go back to your list of skills. You will find that the skill “Sentinare by AltumView” has been enabled. You can also disable the linking from the Alexa app.

9.7 Invite Secondary User

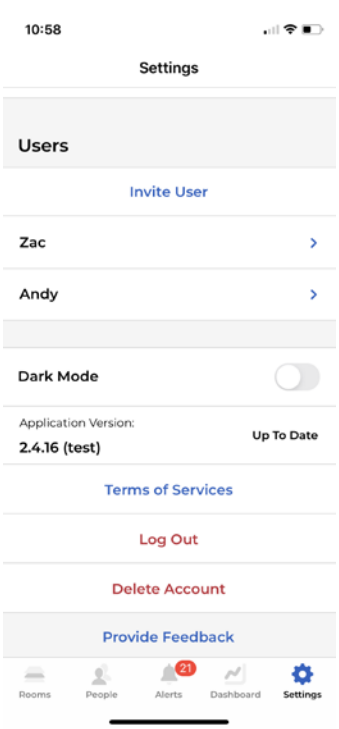
In the paid Home Plan or Enterprise Plan, users can invite some secondary users to the account. The secondary accounts can view the sensors and some other information of the main under your account, but they cannot change the settings of the account. The procedure to invite a secondary user is as follows.

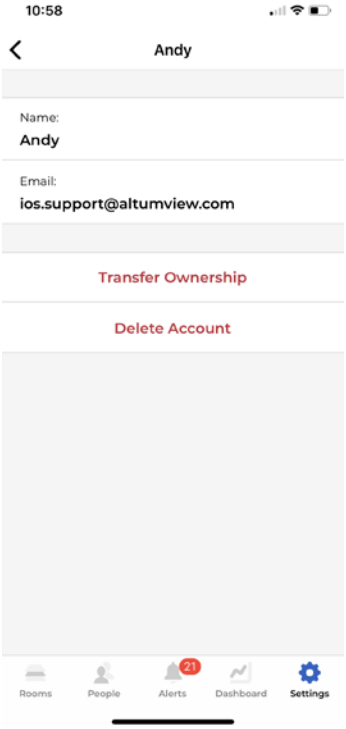
- Tap “Invite User” on the “Settings” page.
- Fill in the email address of the invited user and tap "Submit" to send the invitation.
- The invited user's mailbox will receive an email from altumview.com with a registration code.
- The invited user will create a new account from the login page of the Sentinare App using this registration code. The new account will become a secondary account of the account that generates the invitation.

- Only the administrator can invite secondary users.

All secondary accounts of an account are listed under the Invite User command in the setting page, as shown below. Select a secondary account, in the next page, user can delete the invited account, or even transfer the ownership of the account to the secondary account.

After a secondary user account is deleted, the email for that account can be used to create a new main or secondary account, by following the corresponding instructions for creating new account.





9.8 Dark Mode

This toggle changes the UI of the app between the normal mode and the dark mode.

9.9 App Version

The mobile App version is displayed in this part.

User can tap the “Check for Update” command to find out if there is any newer version of the App.

9.10 Terms of Services

The Terms of Services can be obtained by tapping the “Terms of Services” in the Setting page.

9.11 Switch Account

Sometimes users might need to use multiple accounts, and switch among them from time to time. To save the efforts in typing in different user names and passwords, users can use the Switch Account

feature, so that the App can remember the user names and passwords of multiple accounts, and easily switch among them without retyping the login information.

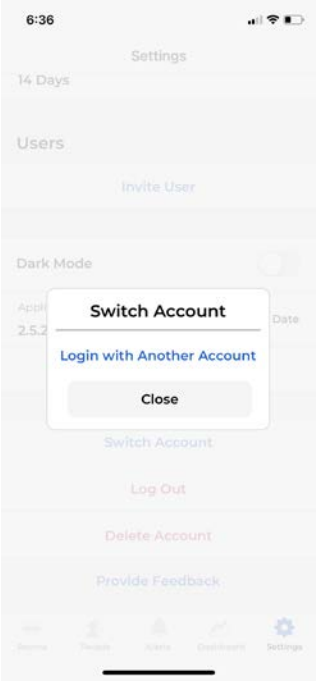
Note that only the current account can receive notifications such as alerts, even if multiple accounts are saved by the App.

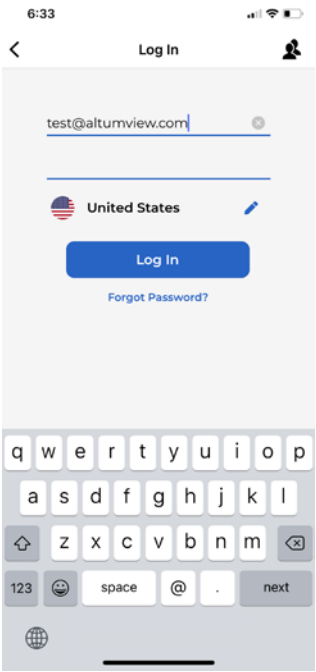
To switch to another account, tap the Setting icon in the lower right corner of the screen, go down to the bottom of the page, and tap Switch Account.

If the login information of other accounts have already been saved, the App will list these accounts. Users can simply tap an account, and the App will automatically switch to that account, without having to re-type the user name and password.

If no other account information has been saved by the App, or a desired account is not in the list, users can tap the Login with Another Account command, and the App will go to the login page, where users can input a new account login information. The previous account will not be logged out, and users can switch to it later. However, only the current account can receive notifications such as alerts. Other accounts saved by the App will not receive notifications.

When the login information of multiple accounts are saved via the Switch Account feature, users can also choose which account to switch to in the login page, by tapping the multiple-people icon in the upper right corner of the login page.





9.12 Log Out

User can log out from the App by taping “Log Out” in the setting page.

9.13 Delete Account

By taping “Delete Account” in the setting page, users can delete all user accounts, reset all devices, delete all people and photos, and erase all alert history.

9.14 Provide Feedback

By taping “Provide Feedback” in the setting page, users can send feedback to us.

10. Sentinare Web Hub

In addition to the Sentinare mobile app, the Sentinare sensor system also comes with a Sentinare Web Hub, which is very useful for institutional customers. Most features of the Sentinare app are available in the web interface, except for device setting up (adding device, setting up WiFi, calibration, etc.), which requires mobile devices that can connect to the Sentinare sensor via Bluetooth.

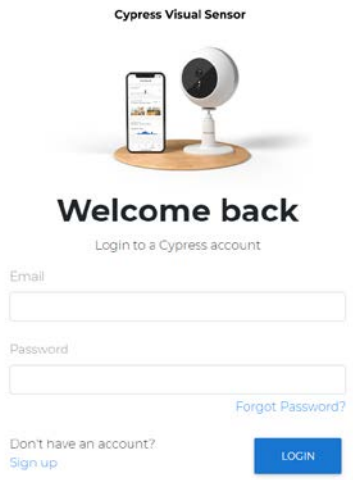
To access the Sentinare Web Hub, go to the following page:

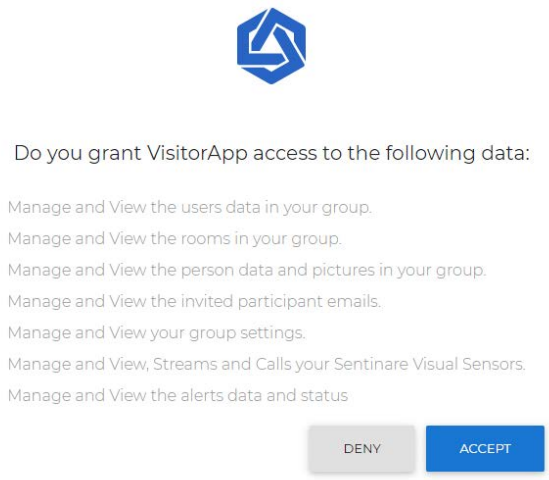
For accounts created in the Canada server: https://app.altumview.ca

For accounts created in the US server: https://app.altumview.com

For accounts created in the China server: https://app.altumview.com.cn

You will see the following login page. Logging in using your Sentinare mobile app account, you will first be prompted to allow the web hub to access your user data, as shown below.



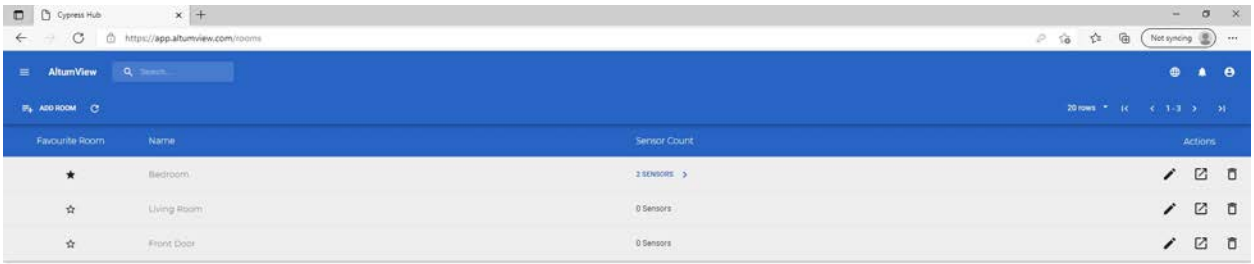


If you get the following error when logging into the Sentinare Web Hub, please clear the cookie and cache of your web browser, or use the incognito mode of the browser, or use a different type of browser:

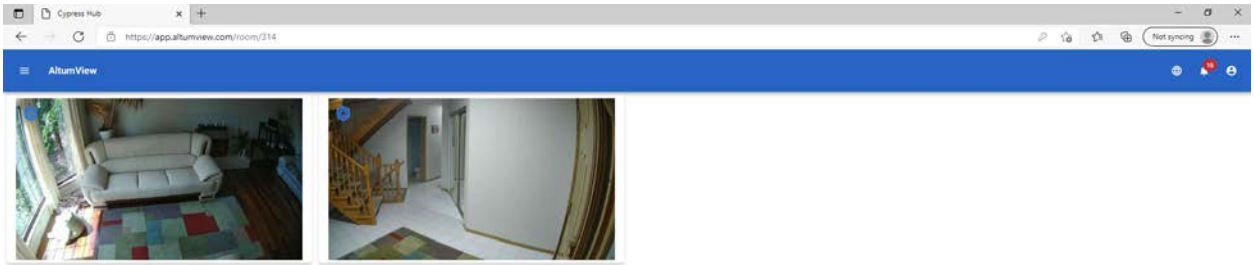
{"status_code": 401, "message": "Token is invalid or expired.", "success": false, "error": {"name": "AccessDeniedError", "code": 28}}

10.1 Rooms

After login, the following Room page will be displayed, where users can go to each room, and also change the name of a room by clicking the pencil icon.

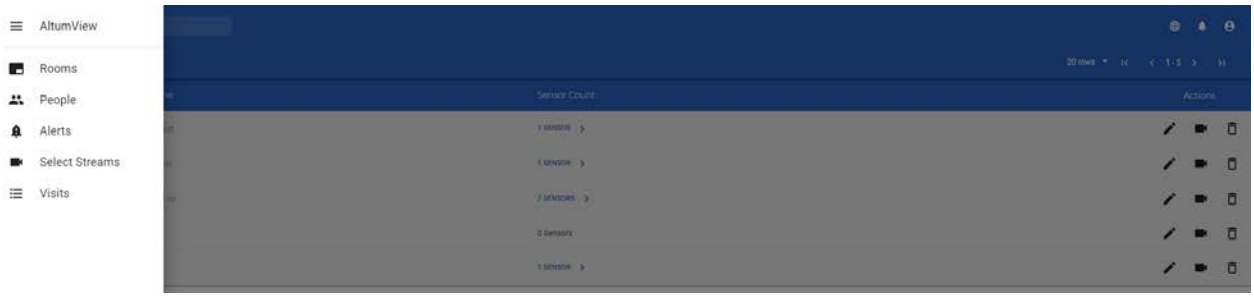


Clicking the icon next to the pencil, users can display the real-time streamings from all devices in that room, as shown below.



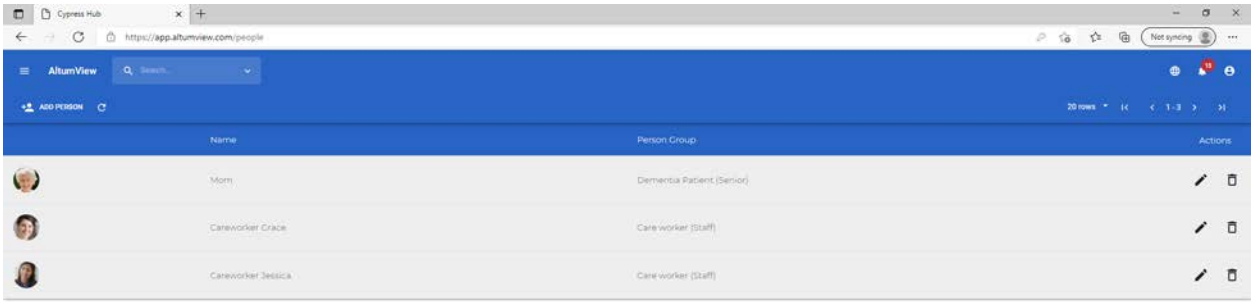
Users can select the language of the page by clicking the globe icon on the top right corner of the page.

Clicking the menu icon in the upper left corner, users can switch to other pages, including People, Alerts, Select Streams, and Visits (the entrance/exit records defined in the Region of Interest page of the Sentinare app), as shown below.

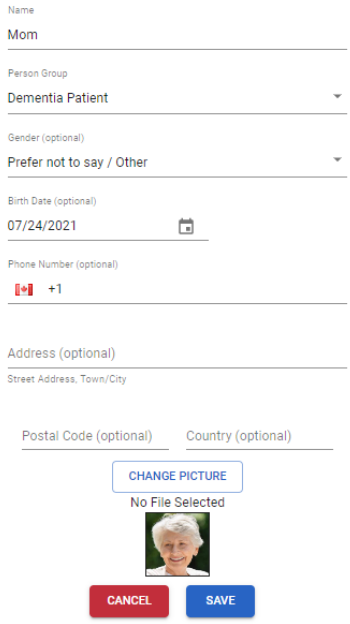


10.2 People

Click on the “People” in the menu will display all the people in the account. The list is the same as that in the Sentinare mobile app.



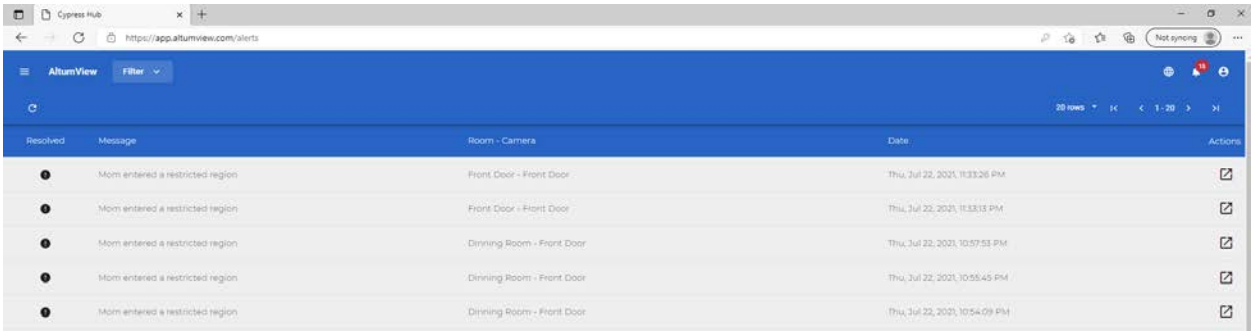
Users can add new person here by clicking “Add Person”. On the popup window, input new person’s name, person group, gender, birth date, phone, and address, then upload one picture, and click “Save” will create a new person. This new person will also appear on the Sentinare mobile app’s “People” list.



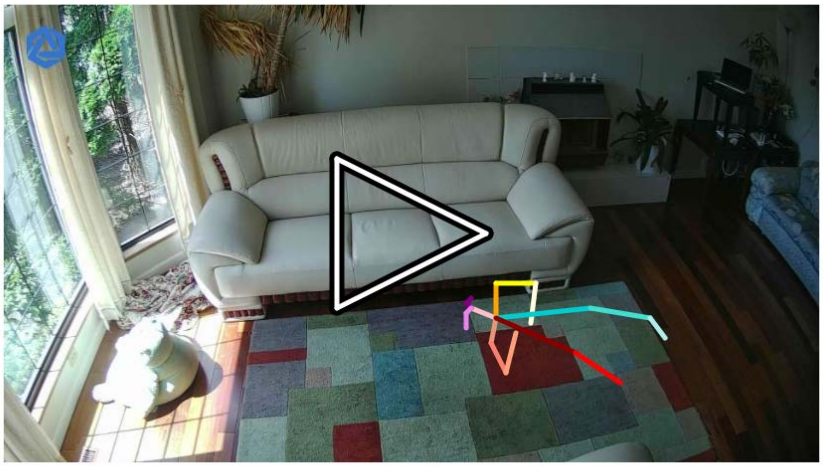
Users can also delete a person in the “People” page by clicking the garbage can icon at the right end of the person’s record. The deleted person will also be deleted from the Sentinare mobile app.

10.3 Alerts

In the menu, click on the “Alert” option, or the bell icon on the top right corner of the web page, all the alerts in the account will be listed. The alert list is the same as that shown in the Sentinare mobile App. Users can use the “filter” button on the top of the page to filter the alerts, or play the alert clip by clicking the icon under the Actions, as shown below.



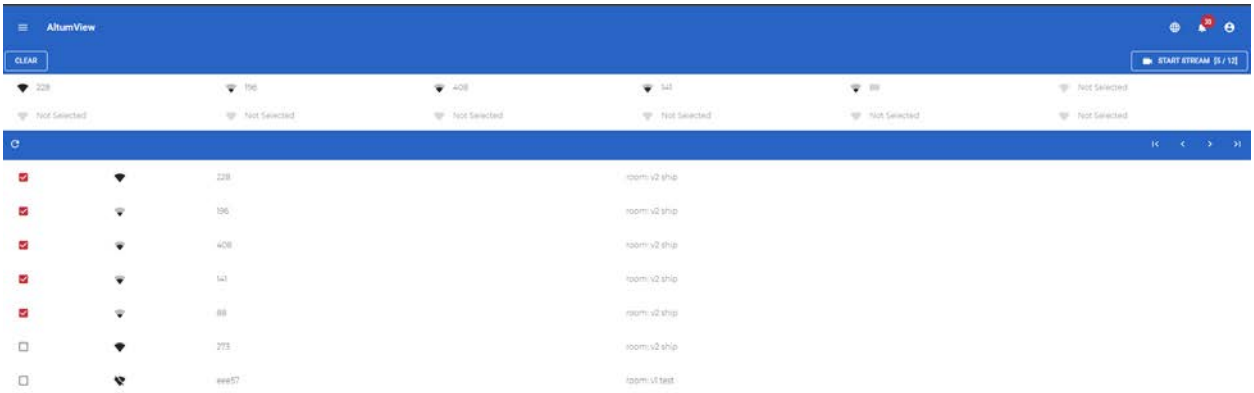
Someone has fallen

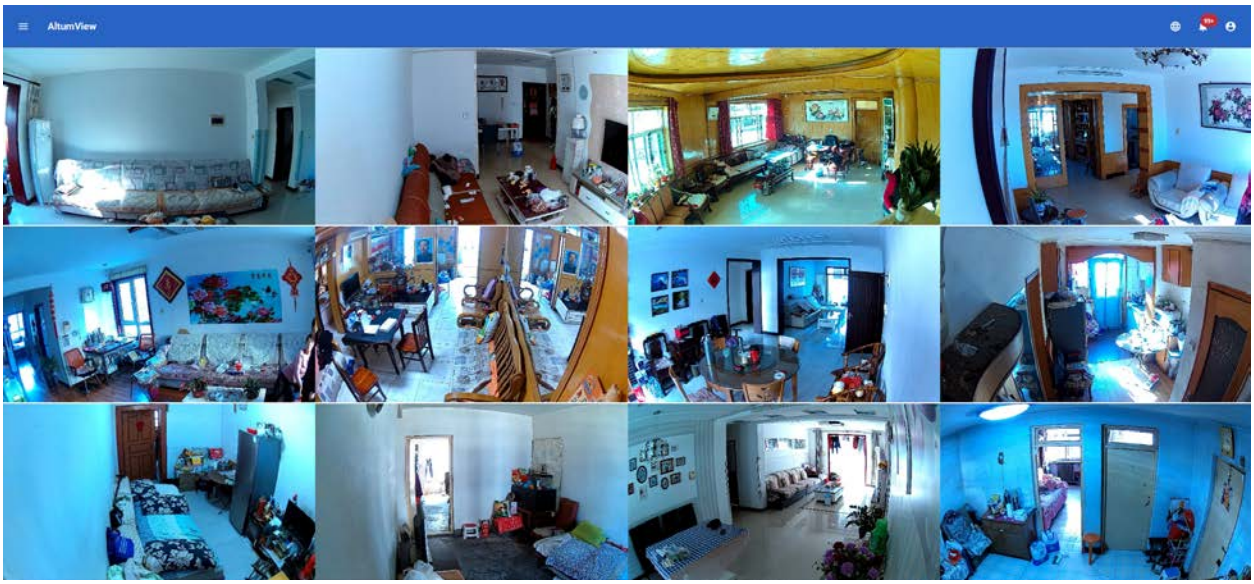


CLOSE

10.4 Select Streams

In the menu, click Select Streams, users can select up to 12 sensors from different Rooms, then click the Start Streams command in the upper right corner. This will display the real-time views from the selected sensors in the same page.





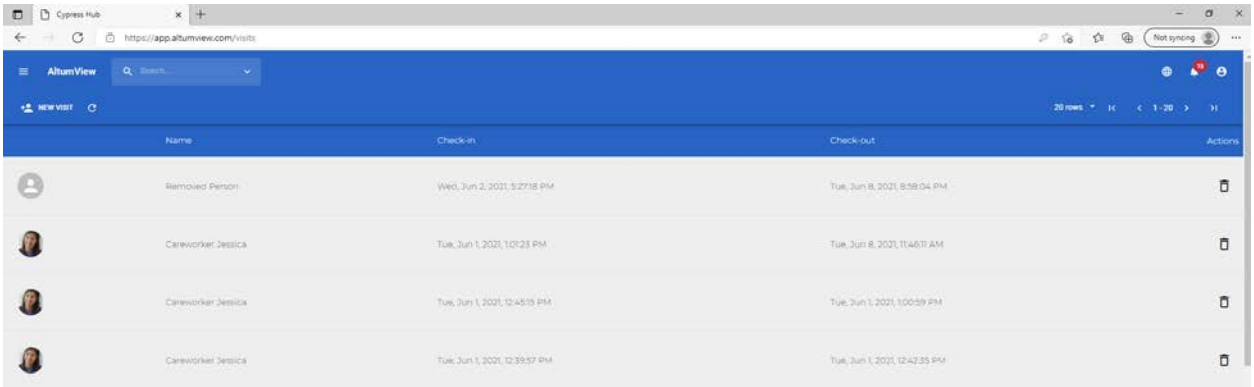
10.5 Visits

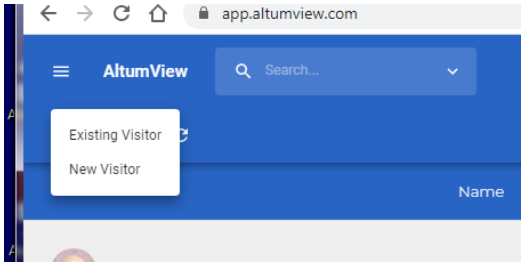
In the menu, click the Visits option will display all the entrance/exit records.

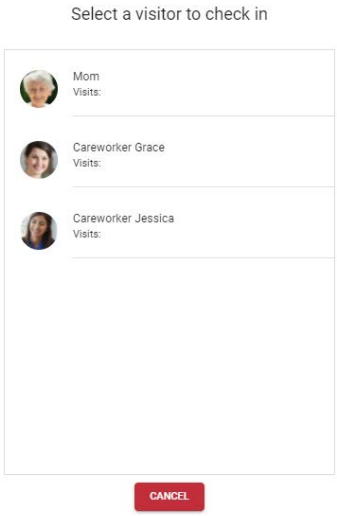
Each entrance/exit record includes a visitor's name, photo, "Check-in" and "Check-out" time.

An entrance/exit record can be generated by sensors for which entrance/exit are defined via the ROI page. If the person's face can be recognized, the check-in and check-out time can be created automatically by the Sentinare sensor. A check-out record can only be created when this person's status is check-in.

Users can also manually create check-in and check-out records. To create a check-in record, user can click on "New Visit" on the top right corner of the page, choose "Existing Visitor" if the person is already in "People" list, click the person on the "Select a Visitor to Check in" list, a new check-in record is created. The check-out time can be manually modified by clicking the "Check-out Now".







If the person is not in the “People” list, click “New Visitor” to create a new person, a new person and this person’s check-in record are created.

User can also delete a record by clicking the garbage can on the right side of the record.

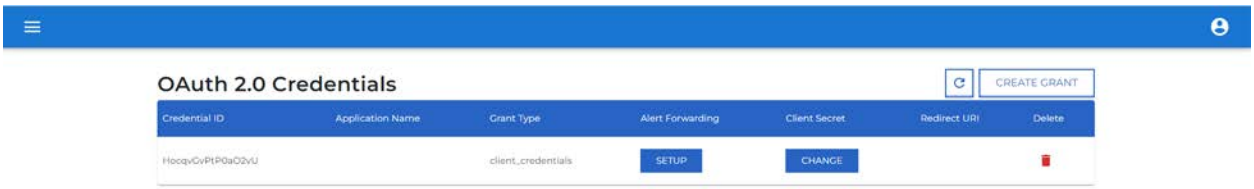
11. API for Third-Party Integration

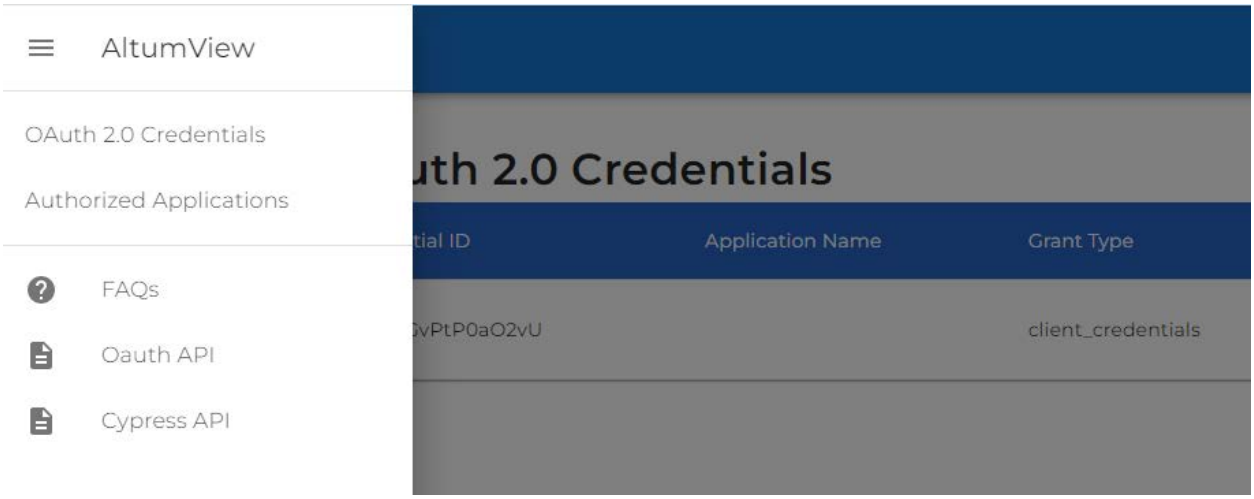
The Sentinare system provides cloud API for third-party integration. All the data from the Cypress or Sentinare 2 sensor can be retrieved from the API, and integrated into other systems.

To do the integration, go to one of the following URLs, depending on which server you are using:

- USA: https://accounts.altumview.com
- Canada: https://accounts.altumview.ca
- China: https://accounts.altumview.com.cn

Log in using your Sentinare account, or create a new account if you do not already have one.



Manually create your client credentials using the button near the top right.

For the next steps, please follow the instructions and examples in the FAQ file, which can be found in the menu of the page above (in the upper left corner). The detailed OAuth API document and the Cypress/Sentinare API document can also be accessed from the menu.