



FlyItSafe

User Operating Manual

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1. Introduction

This manual aims to provide a comprehensive walkthrough on how a UA operator can use the 'FlyItSafe' mobile application to monitor one's UA flights to prevent flying into non-permitted areas.

The information within this manual does not supersede any civil aviation regulatory documents, including the Air Navigation (101 – Unmanned Aircraft Operations) Regulations 2019 and associated Advisory Circulars. You are required to adhere to the conditions of the Activity Permit at all times.

2. About FlyItSafe

'FlyItSafe' is a mobile application that allows the UA operator to monitor their UA flights. You would need to start and end your UA flights with the application.

This mobile application is meant to assist UA operators with ensuring that they fly their UA within permitted areas and to prevent unintentional breaches into non-permitted areas.

The mobile application is available on both Singapore Google Play Store and Apple App Store.

3. Getting Started

Kick start your journey by following the steps below:

1. Download the 'FlyItSafe' mobile application from either Google Play Store or Apple App Store.
2. Before opening the application, you will need to switch on the location feature on your phone for the application to detect your current location. You will also need to allow the application to access your location at all times for the application to be updated on your flight.
3. Ensure that you have given the application the notification rights in order to receive the notifications. Your sound and vibration settings should be switched on in order for the alerts to be more prominent.

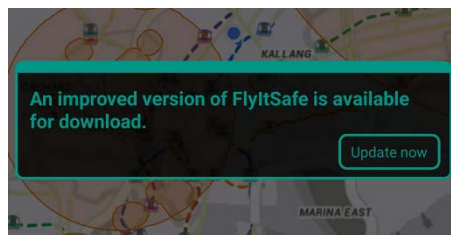
4. Launch the mobile application and you will be presented with a short tutorial about the application if you are accessing it for the first time.
5. You will be presented with the map and the No-Fly Zones in Singapore. This will be the home screen of the application.

4. Important Information

New Releases of Application

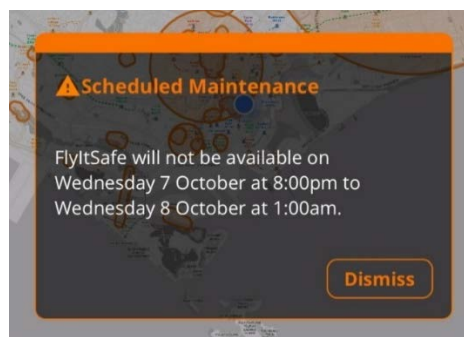
If your application version is out-of-date, there will be a prompt for you to update the application through your Singapore Google Play Store and Apple App Store.

After updating your application, you may proceed to use the application as usual.

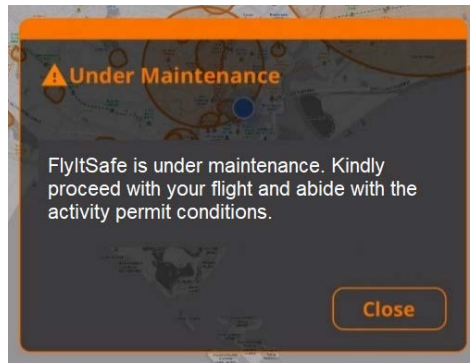


Maintenance of Application

The application will undergo scheduled maintenance occasionally. You will be notified in advance of any upcoming scheduled maintenance date through a prompt when you open the application.

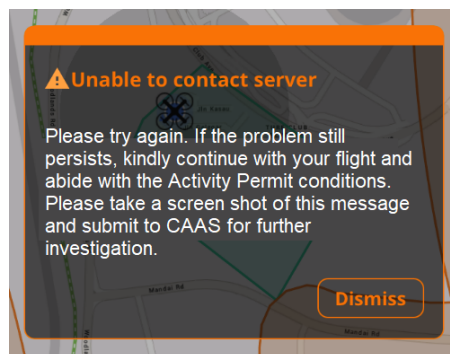


During maintenance, you will not be able to access any functionalities of the application.



Unexpected Error

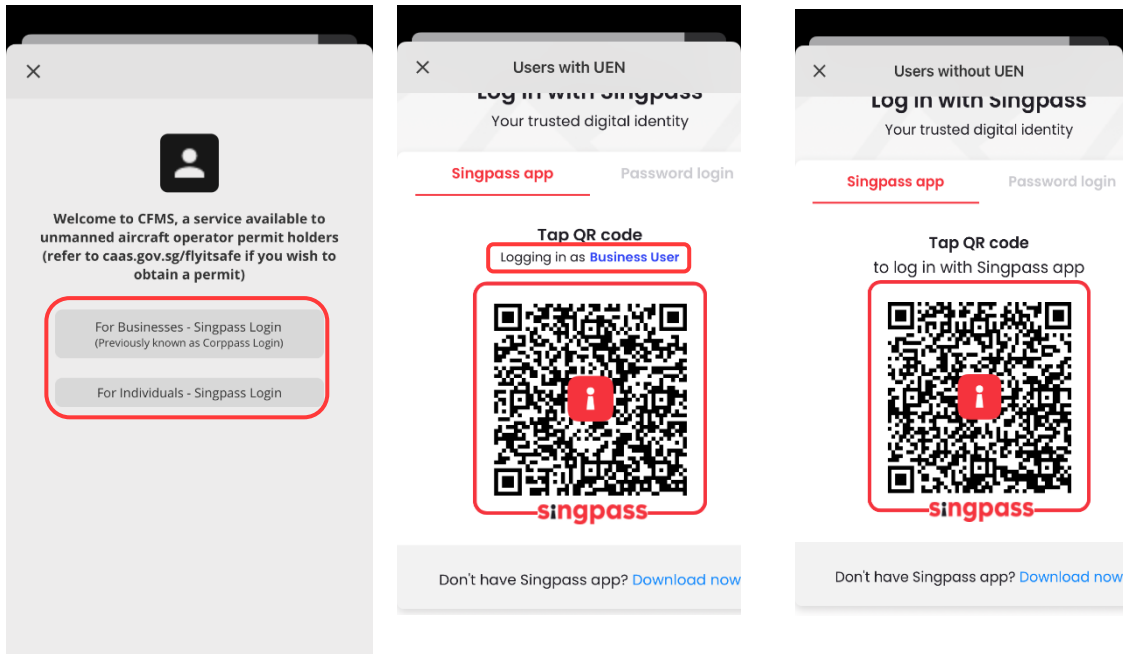
In the event where the application encounters unexpected error, you will be notified via the prompt below and you will be expected to follow the instructions stated in the prompt.



5. Essential Information

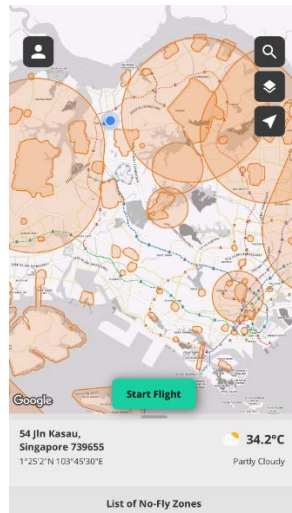
Essential information that is required to conduct a UA operation can be accessed through the side menu after you have logged in. Complete the following steps to login:

1. Choose to either login as a business user or individual. All users will need to login through their Singpass account.



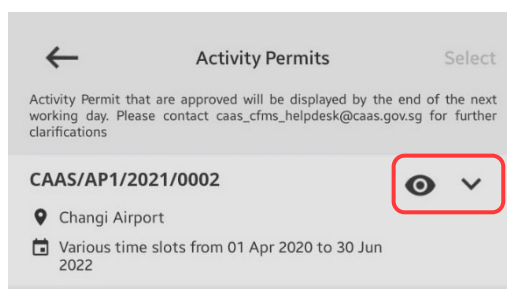
Note: The above screenshot serves as a reference for logging in via Singpass and is correct as of Oct 2021. Please refer to the Singpass website for the latest login procedure.

2. Once you have successfully logged in, you will be redirected to the home screen.



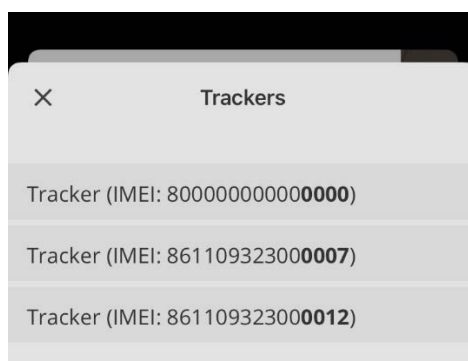
Activity Permits

After you have logged in, you will be able to view your activity permits. You can expand each row to more information of each Activity Permit. To view the areas in the Activity Permit on the map, click on the eye icon.



Trackers

Similarly, you will also be able to view the list of trackers that are linked to your Operator Permit.



6. Flight Operations

A flight operation (hereinafter termed "flight") refers to the time period between when you declare the start of your flight activity, until when you declare the end of it to the relevant Air Tower Controller unit stated in the Activity Permit. This can be a single launch, or a series of multiple launches. The 'FlytSafe' mobile application requires you to declare the start and the end of your flight operation to provide you with correct and relevant notifications.

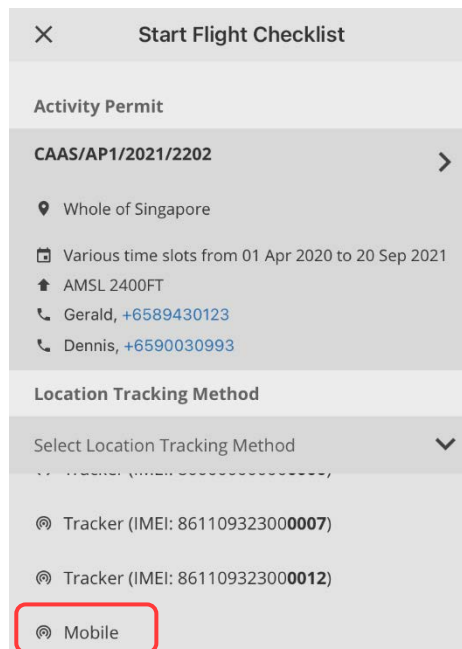
6.1. Starting a Flight

When you are ready to start a flight:

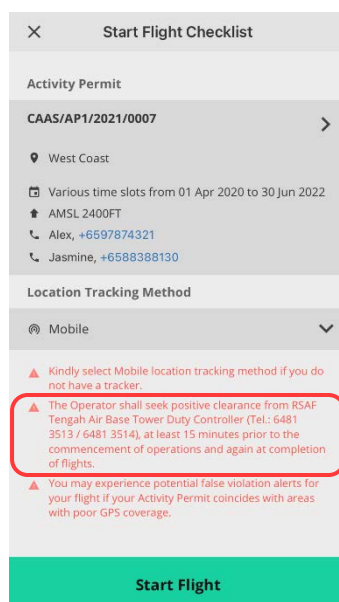
1. Access the side menu on the left and verify that the tracker that you are planning to use for the flight is listed. The IMEI of all the trackers that are linked to your Operator Permit will be listed here.
2. After you have mounted and powered on your tracker, click on the **Start Flight** button on the home screen.

3. Select the Activity Permit that you are going to fly with and at the location that you are currently at.
4. Under the Location Tracking Method, select the tracker that you are going to fly with. You can only proceed when the battery life and its status being reported as 'Not in flight'. The tracker status is updated every 5 second. If the tracker is not detected, you should turn the tracker off and back on again. Wait up to a minute for it to obtain a GPS location. You can also refer to the UA Tracker Manual for exact troubleshooting steps for the tracker.
5. If you are flying a UA under 250g or if your tracker is non-functional, you may proceed to choose Mobile as the location tracking method. Case by case waivers on the use of the tracker will be indicated in the Operator Permit and/or Activity Permit.

Note: You may experience potential false violations alerts for your flight if your Activity Permit coincides with areas of poor GPS coverage.



6. Ensure that you have sought positive clearance from the respective Air Tower Duty Controller before you proceed to the next step.

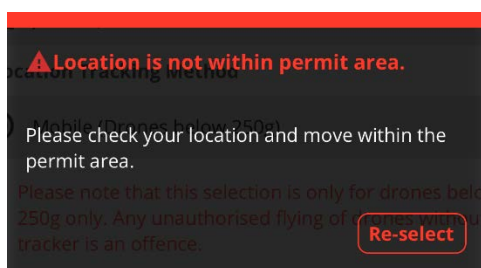


- Once you have received clearance from the relevant authority and have the tracker near the mobile device, please click **Start Flight**.

The following section documents the error messages you may face when starting a flight, and the recommended steps to resolve.

Error Message

How to Resolve and Why It Happen

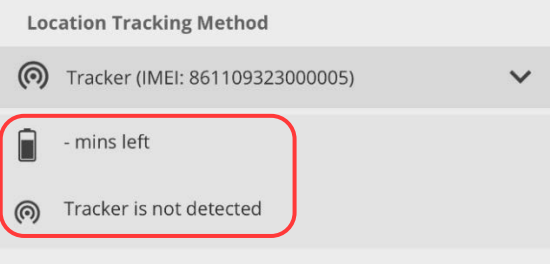
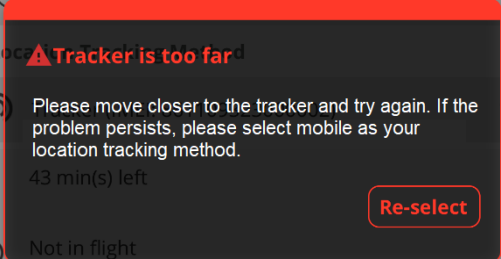
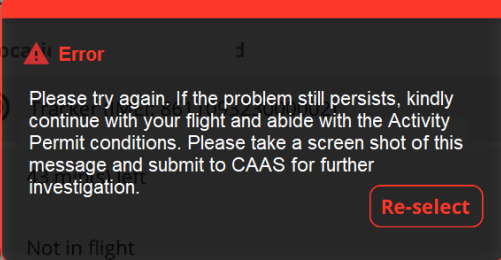


Please ensure that your mobile device and tracker is within the Activity Permit. You can preview the Activity Permit area by clicking on the eye icon.

This error occurs when the system detects that you are not within your approved area when the **Start Flight** button was clicked.

If you are using the Mobile mode of telemetry, your current location will be checked to determine if you are within the chosen Activity Permit area.

If you are using Tracker mode of telemetry, the tracker's location will be

	<p>used to check whether it is within the chosen Activity Permit area.</p>
	<p>Turn off the tracker and back on again. Wait for up to a minute for the tracker to obtain a GPS location. You can also refer to the UA Tracker Manual for exact troubleshooting steps for the tracker.</p> <p>This error message appears when your chosen tracker is not detected by the system. This could mean that your tracker is not switched on, or that it is not connected to our server.</p>
	<p>Make sure your tracker is near your mobile device, and try the 'Start Flight' button again. If the problem persists, please select mobile as your location tracking method.</p> <p>This error occurs when our system detects that your chosen tracker is too far away from your mobile device when the 'Start Flight' button was clicked.</p> <p>The tracker needs to be in close proximity with your mobile device.</p>
	<p>This error occurs when there is too much flight requests at the moment.</p> <p>Follow the instructions as listed in the message.</p>

6.2. During a Flight

The following information and buttons are available to you during a flight:

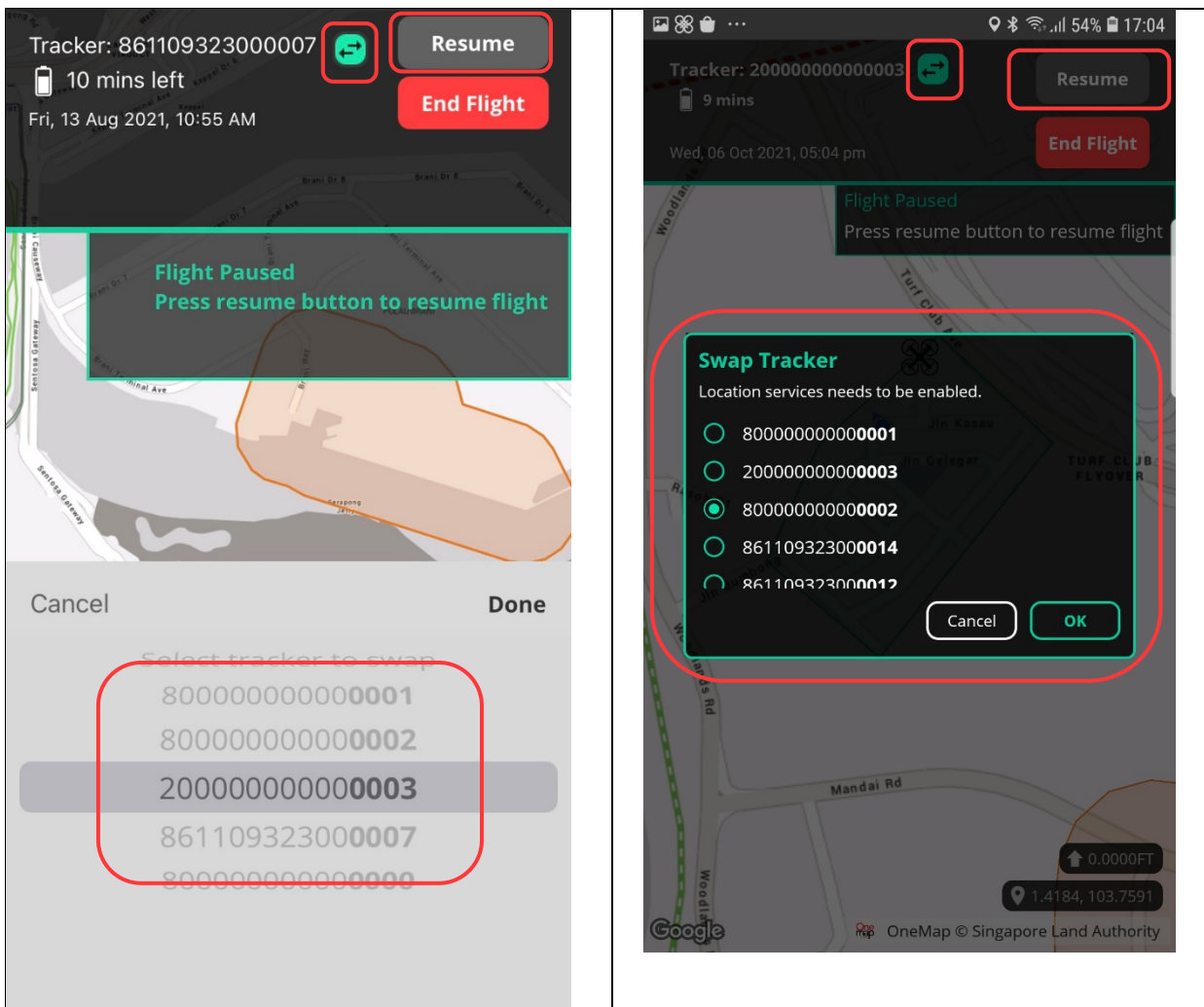
1. **Pause/Resume** flight button (Button will switch between these two statuses)
2. **End Flight** button
3. Mode of Telemetry
4. Current Date and Time of flight
5. Activity Permit area, which the UA is permitted to fly within
6. Any notifications that have occurred during the UA flight. Clicking on the notifications will clear away or acknowledge the notification
7. Current coordinates and altitude of the tracker



Swapping a Tracker

In the event where you need to swap trackers mid-way through your flight, make sure that the tracker you want to switch to is already switched on before proceeding with the following steps.

1. Land your UA in a safe area
2. Activate switching of trackers by clicking on the Swap Tracker icon
3. Select the IMEI of the second tracker that you will be using
4. Click the **Resume** button and proceed to take off your UA¹



¹ If there are any error messages, follow the prompter message to resolve the error before trying to switch tracker again. You may wish to refer to the section on error messages in the Starting a Flight section.

6.2.1. Notifications

Notifications occurs when the UA flies near or into non-permitted areas. When a UA flies near a non-permitted area, the notifications are of Warning status, and it will be indicated by an orange colour. When a UA breaches into a non-permitted area, the notifications will be of Breach status and will be coloured red.

Notifications are also categorised into different types and these types will be conveyed in their respective titles for both Breach and Warning statuses. Here is the list of notification alerts that you may receive during a UA flight:

Notification types	Breach Status	Warning Status
Emergency Area	Entered NFZ. Exit NFZ or land within 5 mins.	Horizontal: Approaching No-Fly Zone (Within 200m) Vertical: Approaching No-Fly Zone (Within 10m)
Temporary No-Fly Zone	Entered NFZ. Exit NFZ or land within 5 mins.	Horizontal: Approaching No-Fly Zone (Within 50m) Vertical: Approaching No-Fly Zone (Within 10m)
No-Fly Zone	Entered NFZ. Exit NFZ or land within 5 mins.	Horizontal: Approaching No-Fly Zone (Within 50m) Vertical: Approaching No-Fly Zone (Within 10m)
Drone Proximity	N/A	Tracker mode of telemetry: Warning: Other drones operating nearby (200m radius)
Permit Expiring	AP expired. Land now.	AP expiring in 10 minutes.
Permit Exceeded	Exited permit area. Re-enter permit area or land NOW.	Approaching permit area border. (Within 20m)
Low Battery	N/A	Tracker Batt is low.

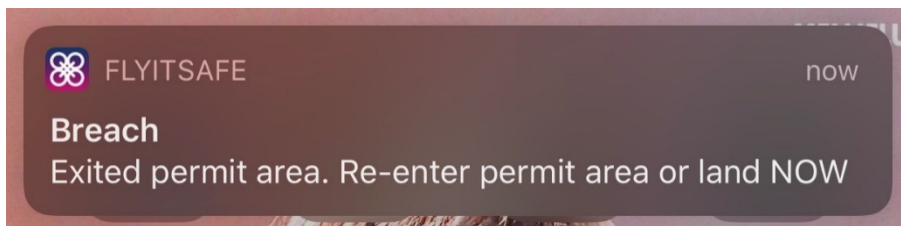
Notification types	Breach Status	Warning Status
		(~10 minutes remaining)
Track Drop	N/A	Tracker mode of telemetry: No updates from your tracker. Continue flight and change your tracker at next opportunity. Mobile mode of telemetry: No updates from Mobile GPS. Please check your mobile phone.
Flight Stopped	N/A	Flight has stopped due to inactivity.

Notifications will appear on your screen in a box with their corresponding colour indicators for notification status. This is to notify you when you are in-app. For notification types other than Emergency Area, acknowledgement is not required. For Emergency Area type of notifications, you must acknowledge Breach type notifications by clicking the **OK** button.

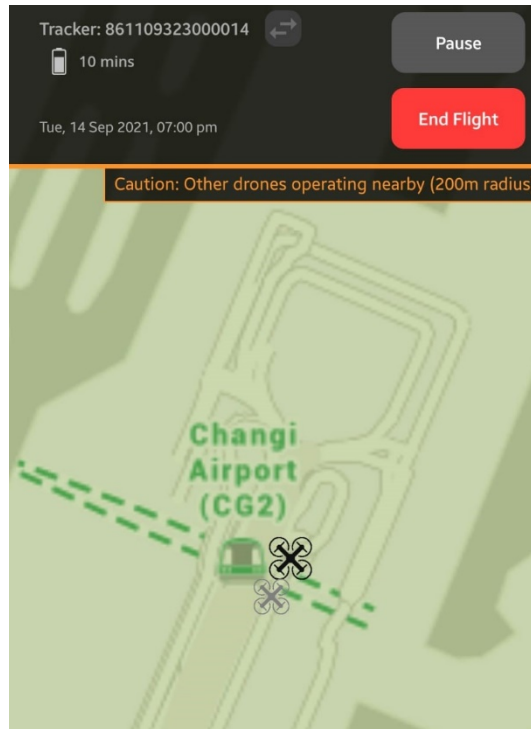
If you put the mobile application into your phone's background, any notifications occurring during mid-flight will still be made known to you via push notifications accompanied with sound and vibration (if the mobile device settings are allowed)

Upon receiving these push notifications notifying you of your UA flight, you can click on the notification to open the 'FlytSafe' application to review the details of the notification.

To resolve the notification, you will need to fly your UA away from the non-permitted area and into your chosen Activity Permit area.

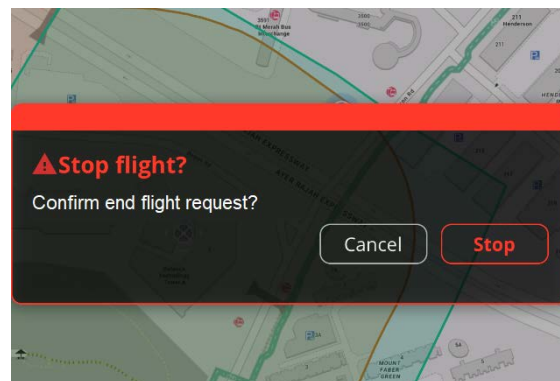
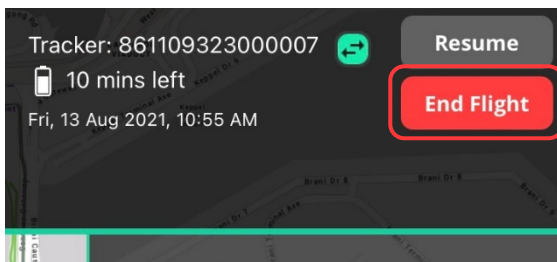


You will be able to view the position of any UA that falls within 1km radius of your UA on your screen. For notification on UA proximity, any nearby UA (tracker) that falls within 200m radius of your UA (tracker) trigger the alert as shown in the figure below. The alert will disappear upon user clicking on it and the alert will only be triggered again when another UA (tracker) falls within the 200m radius which also applies for an existing nearby UA (tracker) if it exits and re-enters the 200m radius.



6.3. Ending a Flight

A flight is only considered to have ended when you click the **End Flight** button and confirm the action. You should also call the relevant authority to notify that the flight has already ended.

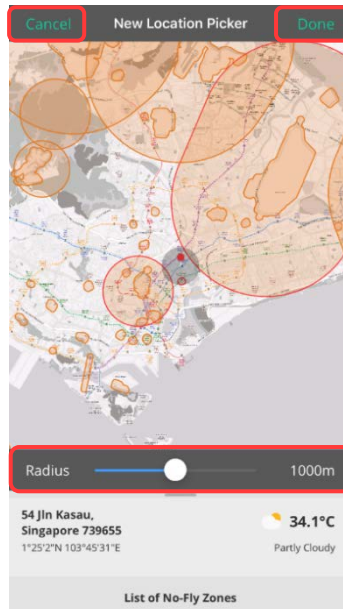


7. Looking for Areas to Fly

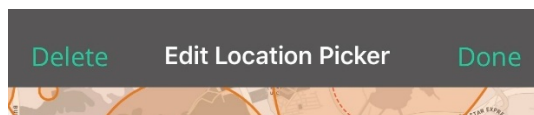
You can find out if the area that you intend to fly in overlaps with No-Fly zones by dropping a pin on the map on the home screen. A pin is dropped by clicking and holding on a location on the map. Once the pin is created, you can now proceed to adjust the radius of the pin. No-Fly zones on the map which are within the pin's radius will have their area outline coloured red.

Adjustments for the Pin

1. Drag slider to adjust radius of pin. No-Fly zones that overlap with the pin radius will be outlined in red.
2. Click **Done** button to save the pin.
3. Click **Cancel** button to remove the pin.



After saving the pin, the screen will return back to the home screen with the pin in place. If you want to delete the pin, click the pin again before proceeding to click the **Delete** button.



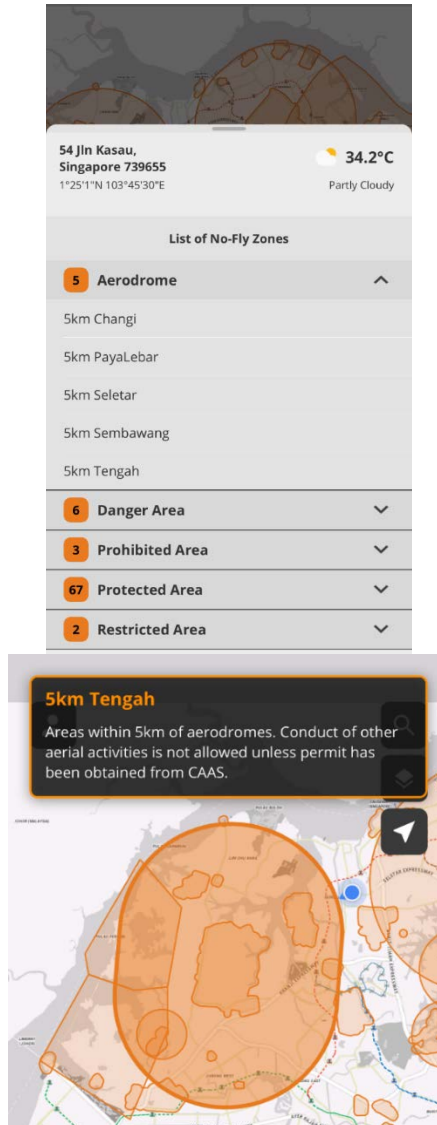
Information about No-Fly Zones

You can find out the list of No-Fly zones by swiping up in the home screen. The No-Fly zones are categorised into Aerodrome, Protected, Danger, Restricted and Prohibited, Temporary and Emergency areas. You can expand the list within each area types to view the individual No-Fly zone. If you want to find out the location of the No-Fly zone on the map, simply expand the rows and click on any entry. The No-Fly zone will be selected and highlighted on the map. The name and description of the No-Fly zone will also be displayed.

Whenever you select a No-Fly zone on the map by clicking on it, the name and description of the selected No-Fly zone will be displayed.

Temporary areas such as those demarcated during special events like National Day will also be listed in this section when they are announced.

You may receive information of Emergency areas and they will be listed here as well.



8. For More Information

Explore the side menu for more information such as the FAQs and UA Do's and Don'ts.

Contact us through the link in the About page for further enquiries.

You may access the page to report any vulnerability of the mobile application here as well.

