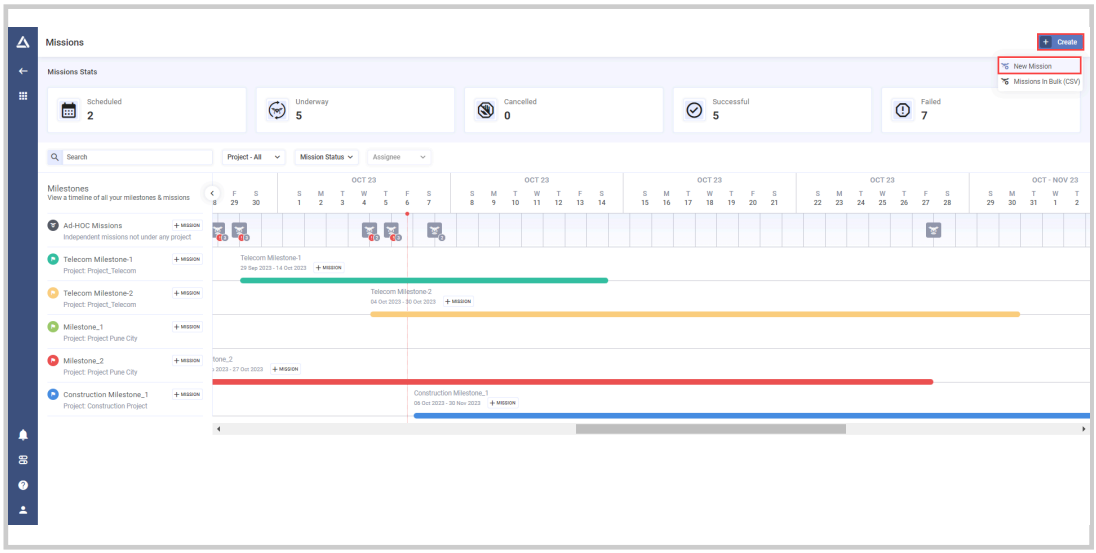
Creating Missions

Updated on 15 Apr 2024 · 16 Minutes to read · Contributors

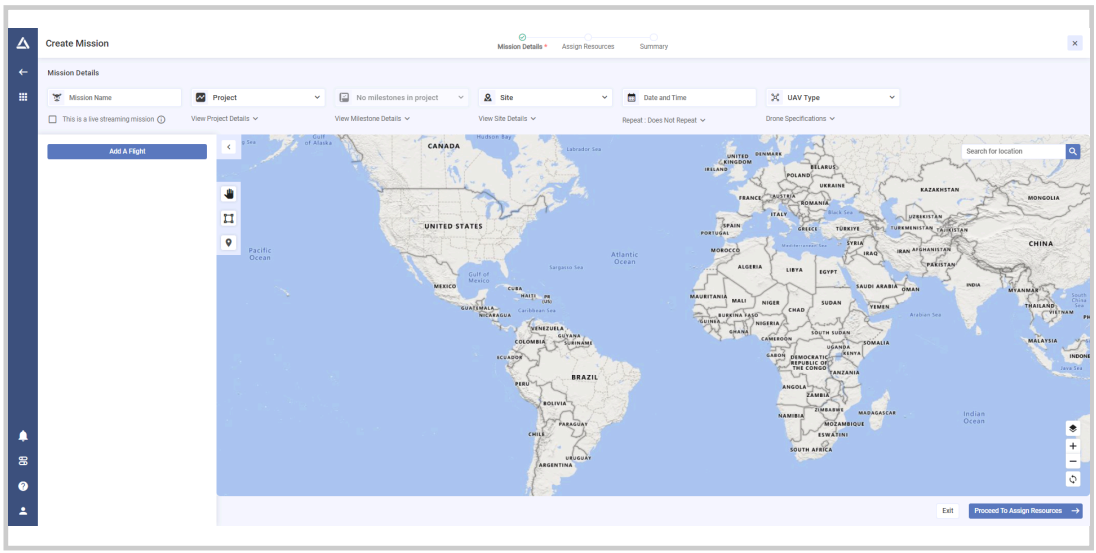
You can either create missions under milestones or create Ad-HOC missions that are not linked to any projects or milestones. Creating missions within a project or milestone aligns their status with the project. This simplifies progress tracking and enhances your ability to measure project success effectively.

- On the **Missions** page click **Create** and then click **New Mission**.



Create New Mission

The **Create Mission** Page is displayed.



Create Mission Page

The process of creating a mission involves the following steps:

1. **Entering the Mission Details**
2. **Assigning Resources to the Mission**
3. **Viewing the Mission Summary**

Step 1: Entering Mission Details

In this step, you need to enter mission details and **add flight(s)**.

1. On the **Create Mission** page, under **Mission Details**, enter or select the following information:

Field	Description
Mission Name*	Enter a name for the mission. **The name of the mission should be between 5 and 50 characters long.**
Live Streaming	Select the checkbox for live streaming the mission. **Live-stream missions must be created at least 15 minutes before the mission start time.**
Project	Select the project under which you want to create the mission. **This is not a mandatory field. If a project is not selected, the mission created will be an Ad-HOC mission and cannot tracked under any milestone or project.**
View Project Details	Allows you to view details of the selected project.
Milestone	Select the milestone under which you want to create the mission. **This field is enabled once you select a project. This is not a mandatory field.** **If a milestone is not selected, the mission created will be an Ad-HOC mission and cannot tracked under any milestone or project.**
View Milestone Details	Allows you to view details of the selected milestone.
Site	Select the site for which you want to create the mission. **Once the site is selected, the site boundary is displayed on the map area as a dotted blue line.**
View Site Details	Allows you to view details of the selected site.
Date and Time*	Select the Date and Time to define the duration of the mission. **The start date cannot be in the past. It is recommended to keep some buffer time for creating flights and assigning resources.**
Repeat	To schedule the mission to repeat at various intervals, select the repeat interval from the dropdown. To know more about recurring missions, click here.
UAV Type*	Select the type of drone to used for the mission. **The type of drone selected impacts the type of payload that can be added to the flight.** To know more about drone and payload compatibility, click here.

Drone Specification	Allows you to view details of the selected drone.

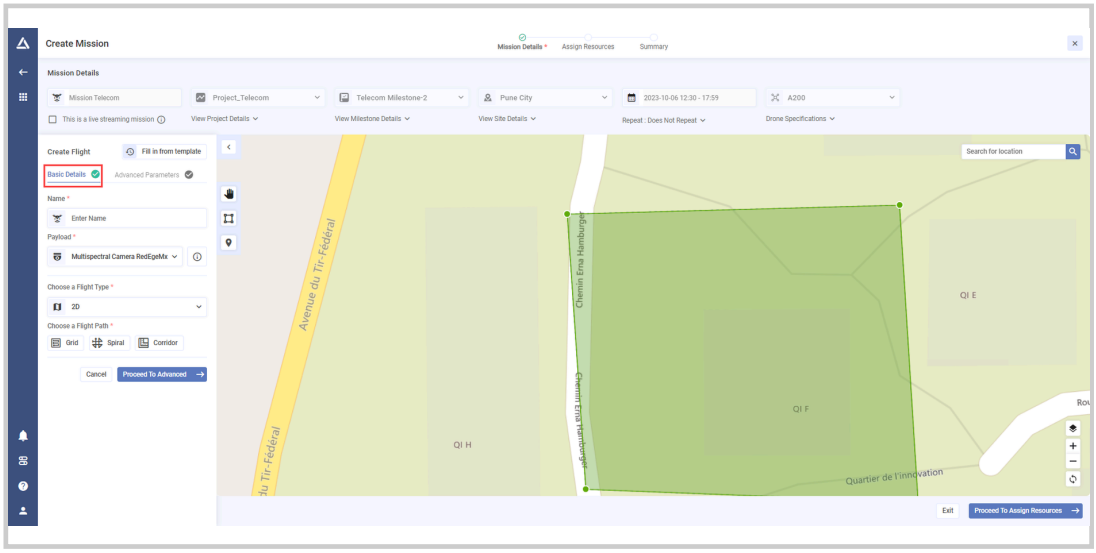
Adding a Flight

> **You can create up to 5 flights under each mission.**

1. To save the mission details defined above, click **Add a Flight**.

> Once you click **Add A Flight**, the mission details are saved and cannot be edited.

The flight area is displayed on the map in green. This flight area can be divided into smaller sections that a drone can cover in a single flight.

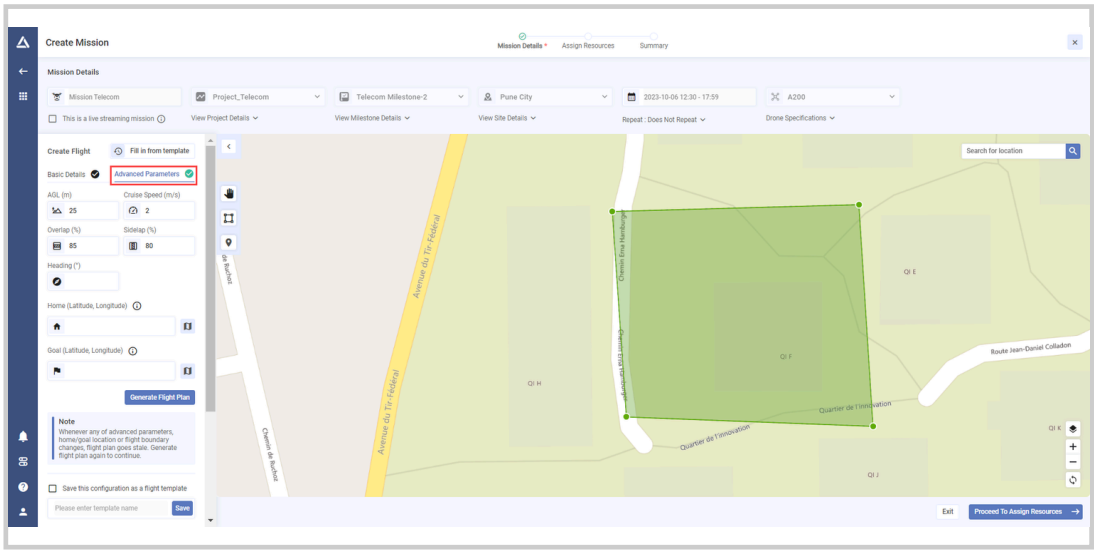


Create Flight - Basic Details

2. To demarcate a different flight area, click the **Mark flight area** icon and mark the required area on the site. You can now go ahead and create a flight to survey this marked area and add more flights to the mission (up to 5) to cover the entire site.
3. In the **Create Flight** section, under **Basic Details**, enter or select the following information:

Field	Description
Name*	Enter a name for the flight.
Payload*	Select payload (camera) you want to use for the mission. **Only the payloads that are compatible with the selected drone type will be displayed under this option.** To know more about drone and payload compatibility, click here. **To view the details of the selected payload, click the info icon.**
Choose a Flight Type*	Select the flight type from the dropdown. **The options displayed here vary based on the payload selected. To know more about the different flight types, click here.**
Choose a Flight Path*	Choose a Flight Path for the flight plan. **The options displayed here vary based on the flight type selected.** **To know more about the different flight paths, click here.**

5. Click **Proceed To Advanced**.



Create Flight - Advanced Parameters

Advanced parameter specifications do not apply to Video and 3D flight types and will be automatically skipped.

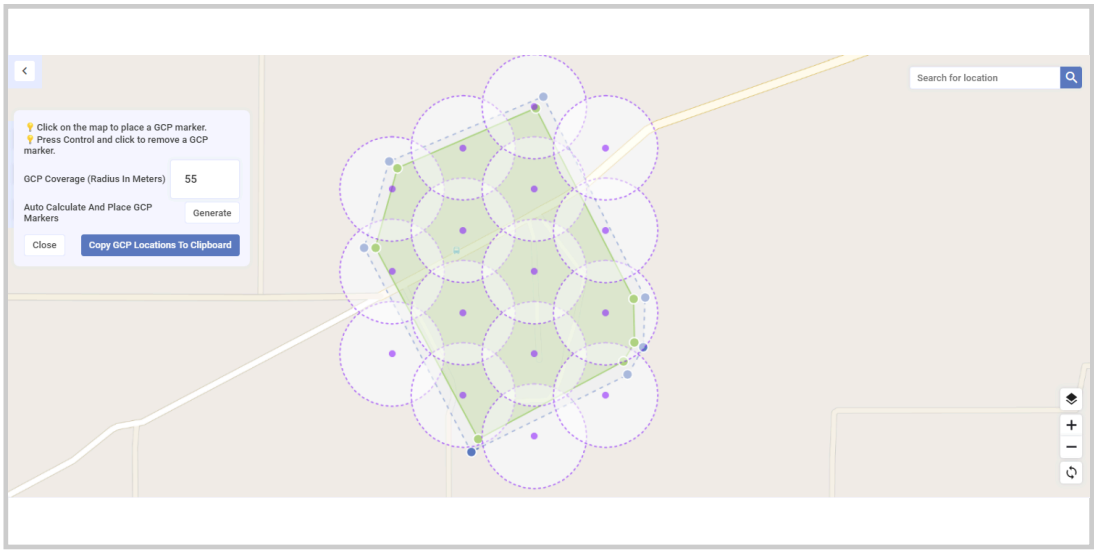
5. Under **Advanced Parameters**, enter or select the following information:

Parameter	Description
AGL (m)	Allows you to set the height above ground level (AGL) in meters at which the drone should fly. **This value must be between 1 and 1999 meters.**
Cruise Speed (m/s)	Allows you to set the cruising speed of the drone. **This value must be between 0 and 99 meters/second.**
Overlap (%)	Allows you to define the percentage of overlap between consecutive captures in the direction of travel. Increasing the overlap value will result in a higher capture rate for the camera, generating more images of the mapped region. More images offer enhanced data coverage but may increase storage and processing demands. **This value must be between 0 and 100.**
Sidelap (%)	Allows you define the percentage of overlap between horizontally captured images during a flight. A higher Sidelap setting leads to a denser image grid, providing better coverage of the mapped area. However, it may also increase data storage, processing requirements, and total flight time and battery usage. This value must be between 0 and 100.
Heading **(°)**	Allows you to define the orientation or direction the drone is facing when it starts a particular segment or leg of its flight. The heading can be specified in degrees relative to true north, where 0 degrees typically represents north, 90 degrees represents east, 180 degrees represents south, and 270 degrees represents west. **If you are unsure about the heading, it is recommended to leave this field blank as SkyDeck will automatically determine the most efficient heading for the fight path. This value must be between 0 and 360 degree.**
Laps (clockwise)	Enter the number of laps to be taken clockwise. On SkyDeck, the primary direction of orbit for a spiral flight path is counterclockwise. However, there are scenarios where specifying a combination of both clockwise and counterclockwise laps can be advantageous. A higher number of clockwise laps leads to a denser and more redundant image grid, providing enhanced coverage of the mapped area at cost of higher data storage requirements, increased processing demands, a longer total flight time, and greater battery usage. **This field is only displayed if you select the flight path as spiral. This value must be between -1 and 100.**

Laps (counter clockwise)	Enter the number of laps to be taken counter clockwise. This value determines the number of laps that the drone should travel in a spiral path in order to cover the mapped area. A higher number of clockwise laps leads to a denser image grid, providing enhanced coverage of the mapped area at cost of higher data storage requirements, increased processing demands, a longer total flight time, and greater battery usage. > **This field is only displayed if you select the flight path as spiral. This value must be between 2 and 100.**
Include flight Perimeter	Select the check box to include the flight perimeter in the flight path. Enabling this option will adjust the flight path to match the shape or boundary of the area being mapped, typically by flying at a varying distance from the edge of the area while maintaining a spiral pattern. This can be useful when the mapped area has an irregular shape, and you want the drone to capture imagery in a way that follows the contours of the boundary closely. However, enabling this feature might also increase the total flight distance and time, as the drone will need to adjust its trajectory based on the shape of the perimeter. > **This field is only displayed if you select the flight path as spiral.**
Home (Latitude, Longitude)	Allows you to set the take off position of the drone by: • Entering the coordinates manually OR • Clicking **Choose from map** icon and then clicking the required location on the map.
Goal (Latitude, Longitude)	Allows you to set the landing position of the drone by: • Entering the coordinates manually OR • Clicking **Choose from map** icon and then clicking the required location on the map.
Flight template	Select the checkbox to save the information as flight template. This is useful when creating multiple flights in a single mission. > **To know more about saving a template, click here.**

6. (**Optional**) To generate GCP markers, click the Plan GCP icon.

In the pop-up that is displayed enter the **GCP Coverage (Radius In Meters)** and click **Generate**. The GCP markers are auto-calculated and placed on the site.



GCP Marking

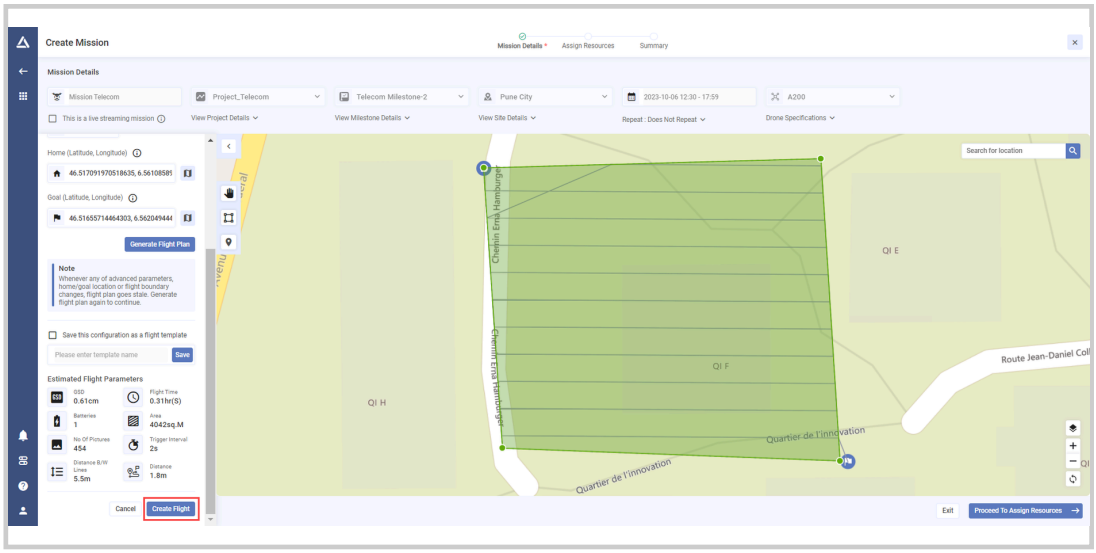
7.Click **Generate Flight Plan**.

The **Estimated Flight Parameters** are displayed:

Parameter	Description
GSD	Displays the Ground Sampling Distance (GSD), which is a measure of the level of detail or resolution in the captured image. A smaller GSD means that each pixel in the image represents a smaller area on the ground, providing higher image resolution and finer details. **The GSD value changes based on the Above Ground Level (AGL) value. A higher AGL value means more area is covered by one image and therefore a higher GSD value.**
Flight Time	Displays the duration of the flight. **The flight time changes based on the cruise speed, overlap/sidelap/laps. A higher speed and lower overlap/sidelap/laps values results in a reduced flight time.**
Batteries	Displays the total number of batteries required to complete the generated flight based on the endurance of the selected drone and the total flight time. **It is recommended to break-down the survey area into smaller flights incase this value is greater than 1.**
Area	Displays the measured area (in sq.M) covered by the flight.
No of Pictures	Displays the number of images that will be captured during the flight. **The number of images captured in a single flight depends on the flying altitude, the overlap and side lap percentage. In case of Spiral flight path this also depends on the number of laps and clockwise laps.**
Trigger Interval	Displays the time interval at which the camera captures an image. This value depends on the flying altitude, cruise speed and the overlap percentage.
Distance B/W Lines	Displays the distance (in meters) between lines of the flight path. **This value depends on the flying altitude and Sidelap percentage.**
Distance	Displays the distance (in kilometers) covered by the drone during the flight.

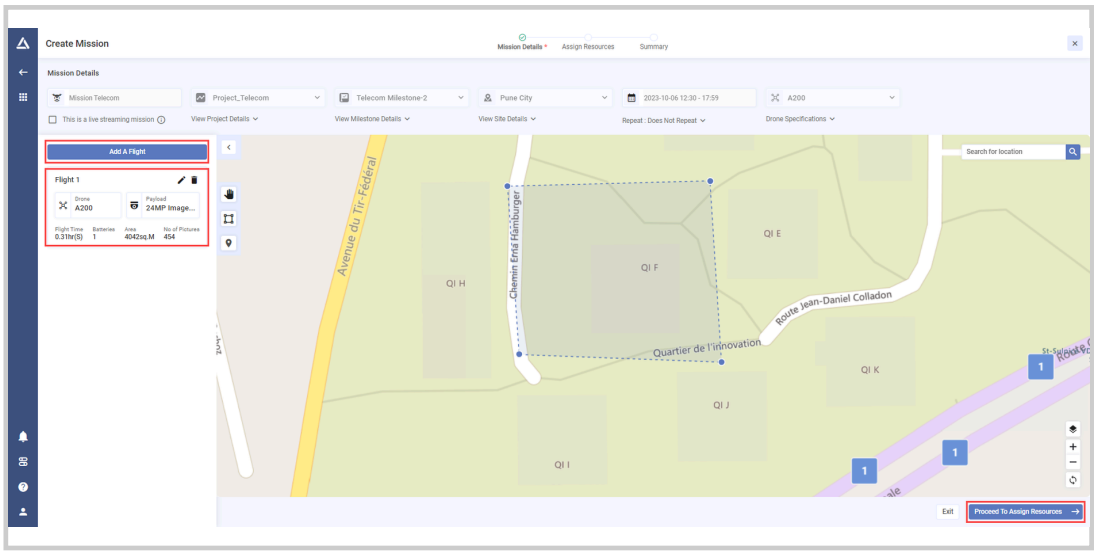
> You can save this configuration as a flight template to be used later. To know more, click **here**.

8. Once the flight plan is generated click **Create Flight**.



Flight Plan Generated

9. To add more flights to the mission, click **Add A Flight**. OR Click **Proceed To Assign Resources**.



Flight Created

> **The details of the created flight are displayed in the left pane. You can edit flight details (all details except payload) or delete this flight.**

Step 2: Assigning Resources

In this step, you need to assign dedicated pilots, drones and cameras to the mission.

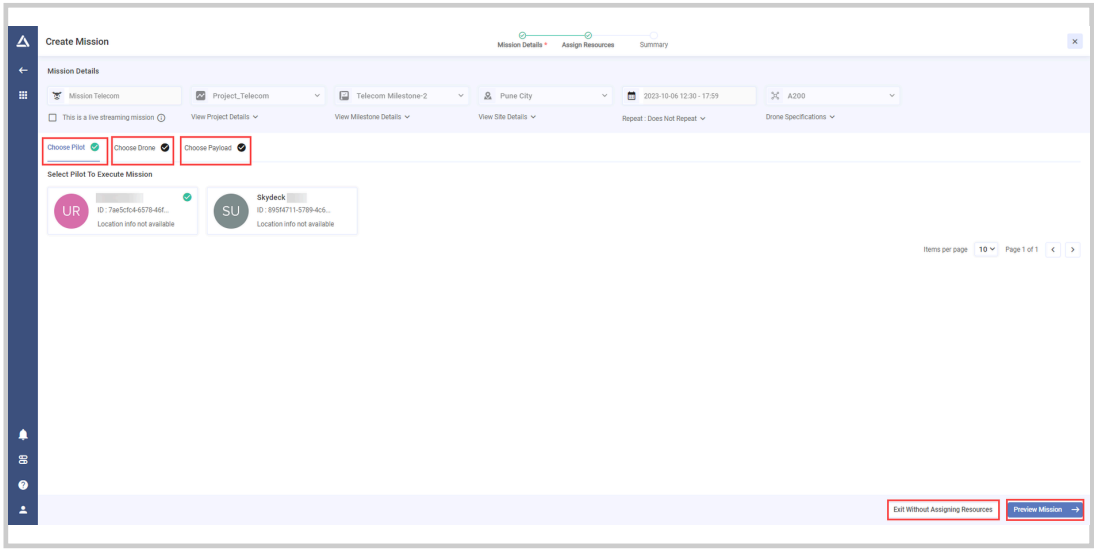
> **Only the resources that are not assigned for another mission at the same time are displayed here.**

1. Under **Choose Pilot**, select a pilot from the available options to be assigned for the mission.
2. Under **Choose Drone**, select a drone from the available options to be assigned for the mission.
3. Under **Choose Payload**, select a camera from the available options to be assigned for the mission.

> **You can skip assigning resources at this stage by clicking Exit Without Assigning Resources. The mission created will be in a Draft stage and the mission will be displayed with a red exclamation**

> **mark on the timeline. The resources can be assigned to the mission at a later stage. To know more about different mission stages, click here.**

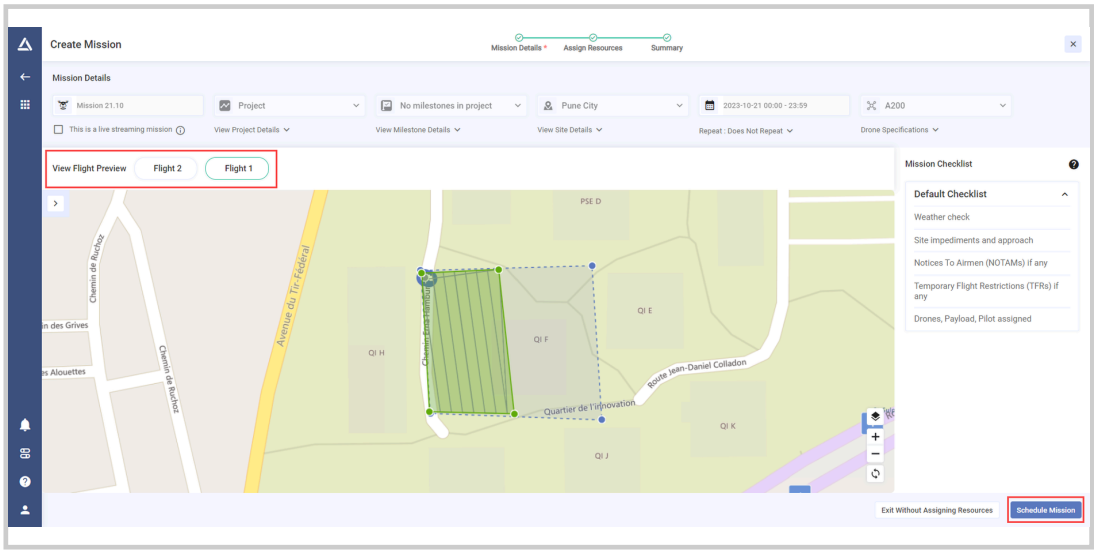
4. Click **Preview Mission**.



Assign Resources

Step 3: Viewing Mission Summary

In this step, you get a preview of the created mission. You can switch between flight(s) (if more than one flight is created for the mission) to review the flight path

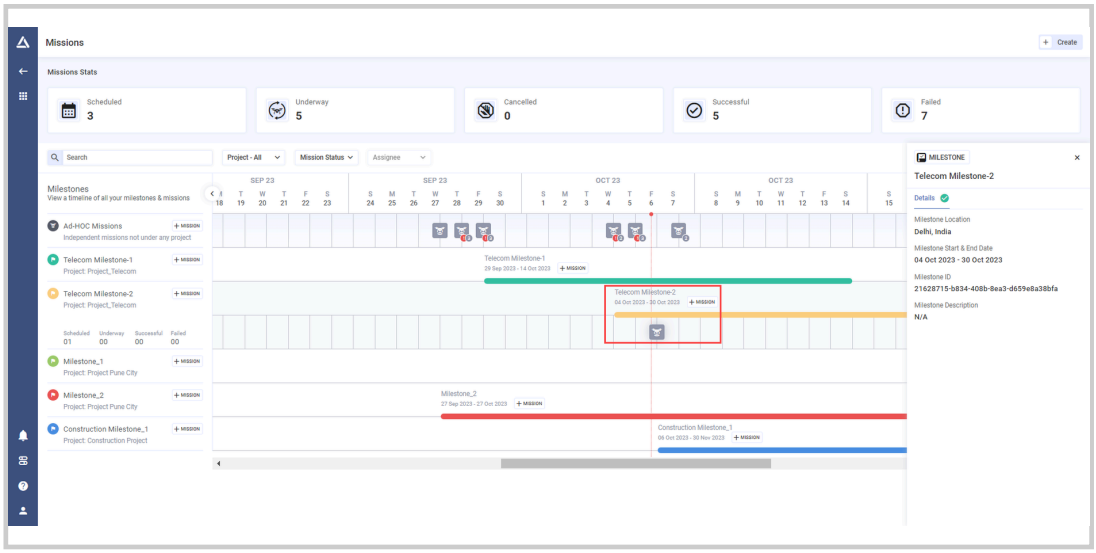


Review and Schedule Mission

- To schedule this mission, click **Schedule Mission**. OR To exit the mission creation process at this stage, click **Exit Without Assigning Resources**.

> **If you click Exit Without Assigning Resources, the mission created will be in a Draft stage and the mission will be displayed with a red exclamation mark on the timeline. The resources can be assigned to the mission at a later stage. To know about steps on assigning resources, click here.**

The mission is created and displayed on the Missions timeline.

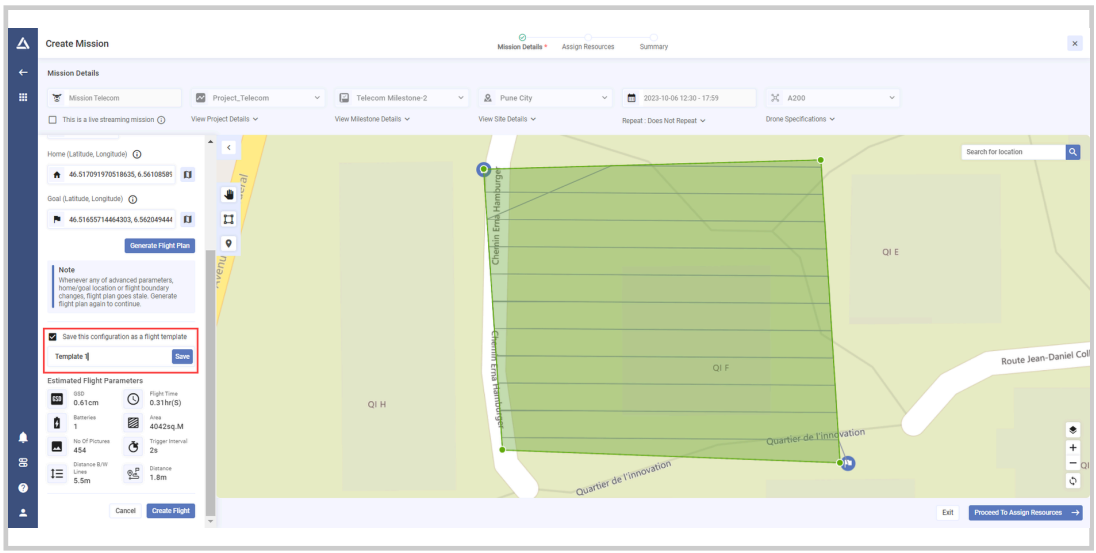


Mission Created

Saving and Reusing the Flight Template

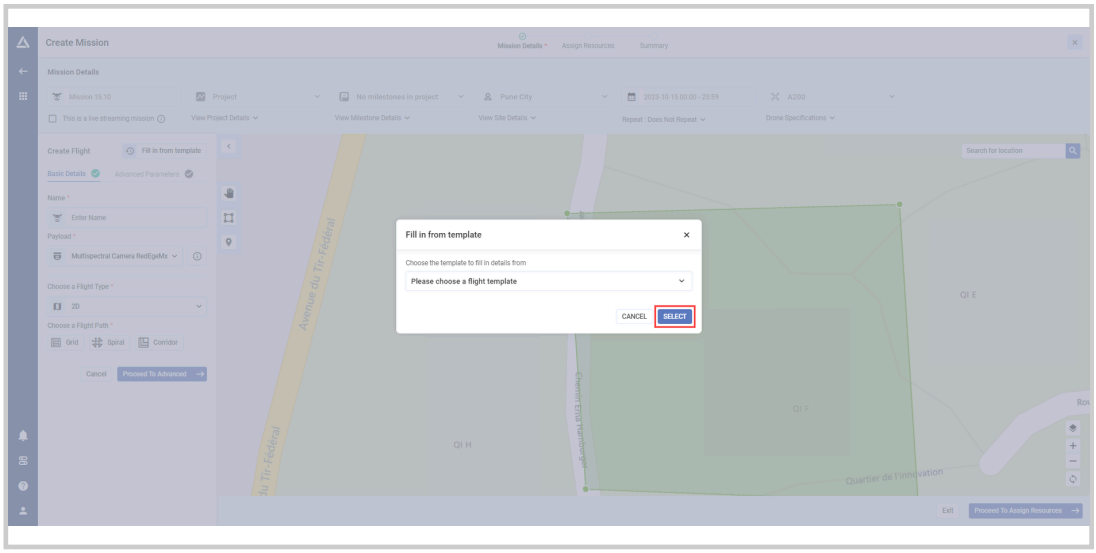
When a flight template is saved only the basic flight details are stored. The advanced parameters are not saved in the template and display the default values.

1. To save the flight template, select the **Save this configuration as a flight template** checkbox.
2. Enter a name for the template and click **Save**.



Save Flight Template

1. To use a saved flight template, click **Fill in from template**. The **Fill in from template** pop-up is displayed.
2. Select the template from the available options and click **SELECT**.



Select Saved Flight Template

The basic flight details from the saved templates will be auto-populated.

Previous
Understanding the Layout of the Missions Page

Next
Creating Missions in Bulk