DJI Enterprise Drones

2D Mission Planning Procedures

1. Power on your Drone and Remote Controller

Start by powering your controller on. If you like, you can also power your drone on as then you won't have to select the drone type and sensor in the map mission settings (as seen in step 7).

2. Connect the Remote Controller to WiFi or a Mobile Hotspot

Connect your remote controller to a WiFi network or mobile hotspot for seamless mission planning. This connection ensures that base maps load properly, providing essential context for your route planning.

To connect, pull down from the top of the screen and tap the WiFi icon.

3. Access the Flight Route Planning Interface

From the home screen of the DJI Pilot app, tap **Flight Route** to enter the mission planning interface. This is where you'll set the parameters for your 2D photogrammetry mission.

4. Create a New Route

Tap the **+** in the top right corner of the screen, then select **Create a Route** to begin defining the parameters for your mission.

5. Select Area Route

Tap **Mapping** to outline the specific area you'll be mapping. This option enables you to set a precise perimeter for your photogrammetry mission, ensuring comprehensive coverage of your target area.

6. Locate Your Site on the Map

Use the map interface to find your target location. Pan across the map to navigate, and use two fingers to zoom in or out as needed until your site is centered and clearly visible.

7. Define Your Mission Area

Tap directly on the map to start outlining the boundaries of your mission area. Each tap will create a point, allowing you to draw a precise perimeter around the area you wish to map.

8. Adjust the Polygon to Match Your Survey Area

Edit the polygon by moving the points to accurately fit your desired survey boundaries. Take your time to ensure the shape covers your target area precisely. Once you're satisfied with the polygon, tap the blue check mark to confirm.

9. Set the Mission Name and Adjust Key Settings

Update the mission name to reflect your project. Navigate through the app's menus to adjust the key settings listed in the tables below. To ensure optimal performance, leave any settings not specified in this guide at their default values.

10. Basic Settings

Drone Setting	Set To	Considerations	Reason
DJI Enterprise Drones	Visible Wide & IR	What specific camera will best support your mission objectives?	Selecting the appropriate camera lens is crucial for capturing the right level of detail and ensuring flight parameters align with your project's requirements.
Collection Type	Ortho Collection	Will this mission require capturing vertical surfaces in detail?	Opting for Ortho Collection focuses on horizontal surfaces, ideal when detailed imagery of vertical structures isn't needed.
Ortho GSD	Default	What ground resolution do you need for your map or model?	Adjusting the GSD affects image clarity and coverage. Higher GSD values yield more detailed images but may alter other mission settings.
ASL / ALT / AGL	(AGL) Recommended - Need to Download DSM File from Internet ALT (Relative to take off)	Is your altitude reference based on takeoff location or sea level?	Setting altitude to AGL and downloading the DSM File from the internet will ensure your drones will always fly at your pre-set terrain follow altitude when terrain elevation changes. ALT (Relative to take off) will leave your drone at that height regardless of changes in Terrain
Route Altitude	200–400 ft (60–120 m)	What altitude gives the right balance between speed and image quality?	Mid-range altitude completes the survey faster without compromising image resolution.
Elevation Optimization	Disabled	Does the terrain vary enough to warrant elevation adjustments?	Disabling keeps the focus on mapping flat surfaces. Enable only if you expect significant elevation changes.
Safe Takeoff Altitude	User Preference	Are there tall obstacles near your takeoff location?	Setting altitude above nearby obstacles ensures the drone clears them before navigating to the mission area.

Speed	Max Speed Allowable	Should you adjust speed based on lighting or mission needs?	Higher speeds reduce flight time. In low-light or high-detail needs, lower speed enhances image sharpness.
Course Angle	User Preference	What flight direction covers the survey area most efficiently?	Adjusting the course angle reduces turns and maximizes area covered per battery cycle.
Upon Completion	Return to Home	What's the safest way to conclude the mission?	Return to Home automatically brings the drone back, providing a safe and reliable end to the flight.

11. Advanced Settings

Advanced Setting	Set To	Considerations	Reason
Target Surface to Takeoff Point	0	Is the survey area at a different elevation from the takeoff point?	If roughly the same elevation, leave at 0. Only adjust if there's a significant altitude difference.
Side and Front Overlap Ratio	~70% Side Overlap ~80% side Overlap	What level of overlap do your images need?	70% ~ 80% ensures enough coverage for a seamless map. For large areas, reducing horizontal overlap (no less than 60%) can maximize coverage per battery.
Margin	0	Do you need additional margin around the survey area?	When the flight path covers the target area, extra margin isn't needed. Keeping at 0 saves battery.
Photo Mode	Distance Interval Shot	What measurement should be used to capture images?	Distance Interval Shot maintains consistent image overlap, essential for creating a cohesive map.
Custom Camera Angle	Disabled	N/A	Keeps the camera angle at nadir (-90°), the ideal angle for photogrammetry and mapping accuracy.
Route Start Point	User Preference	Where is the most efficient starting point?	Selecting a start point close to takeoff optimizes the flight path and conserves battery power.
Takeoff Speed	User Preference	How quickly should the drone ascend?	A faster takeoff speed can be helpful on busy sites but may slightly reduce battery life.

12. Save your Settings

Once complete, click the **save icon** in the top left. You will also see the total mapping area, estimated flight duration and the total number of photos it will collect. Your mission is now ready to fly!