**Purpose:**

To provide a step-by-step guide to collect data with terrain awareness using the Maps Made Easy application.

**Equipment Used:** Inspire 2 with the X5S camera, Maps Made Easy App

**Procedure:**

1. **PREPARE**

1.1 Perform pre-flight check

## Click here to access the [pre-flight checklist](https://drive.google.com/open?id=1N7olhYsdeLCxWrlm6B_6eC8dtpNGgEjD).

1. **COLLECTING DATA WITH THE MAPS MADE EASY APP**
	1. Click ***Create New Mission***

*Note: If you are pre-planning a mission prior to heading to the field, make sure the UAS is not connected to the app while you are pre-planning. If the aircraft is connected, the App will use the aircraft's current position as the anticipated takeoff point. With the aircraft disconnected, you can navigate to your take off point in the App and double tap the location (which creates a purple point) to mark it.*

* 1. Double tap on a desired location that will be your takeoff point (purple point). *\*see note above\**
	2. Define your study area by single tapping the screen to create each vertex (orange point) for your study area polygon. Try to minimize the number of points necessary to define the study area extent.

*Note: To delete a point, tap on the orange point you wish to remove.*

* 1. Tap the black bar near the top of the screen (the bar that contains the word Range in it)
		1. Tap the Overlap
			1. Set Along Track: ***80%***
			2. Set Across Track: ***80%***
		2. Tap the Camera Control
			1. Select ***Auto Exposure***
			2. Format: ***JPG***
			3. White Balance: Select ***Sunny*** or ***Cloud*** depending on weather
			4. Angle: ***Nadir***

*Note: Images taken at a nadir direction means the camera is pointing vertically down at the ground, so the camera’s axis is perpendicular to the ground.*



Image source: <https://support.esri.com/en/other-resources/gis-dictionary/term/nadir>

* 1. Tap Map Icon on the left side of the screen 

2.5.1 Tap on Ruler Icon

2.5.2 Select ac/mi (acres/miles)

* 1. Tap on Magnifying Glass Icon, adjust the following. 

2.6.1 Altitude: 220 ft

*Note: Altitude and Resolution should be specified according to the job requirements (e.g. the higher the altitude, the lower the resolution.)*

* 1. Tap on the Pentagon 

2.7.1 Area, Distance, Max Speed, Duration, Batteries, Images, Points, and Storage information are displayed.

2.8 Tap on the Aircraft path icon 

2.8.1 Distance Flown, Speed, Altitude AGL, Battery flight, Storage, Images, Remaining time will all come into view and show the current information when the drone is in flight.

 2.9 Launch

 2.9.1 Tap on the Airplane icon 

2.9.2 Select **Upload.** This will begin to upload the mission. Once finished, tap **Start** to have aircraft begin its mission.

*Note:* ***Home*** *will bring the aircraft back to the designated takeoff point (see 2.2).* ***Stop*** *will pause the aircraft in midair, but you can select resume to continue the mission.*

3.0 **PROCESSING DATA**

3.1 Process your data by following the instructions in [Introduction to Drone Data Processing](https://drive.google.com/drive/folders/1rVxI4gDqcuFBzpnpnMY-wjsjmAv4EBe1)

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