



1. IMU CALIBRATION

Difficulty Level: Easy

Completion Period: 1 course hour

Objectives

This module aims to equip students with the essential skills to proficiently calibrate UAVs. Students will grasp the significance of calibration in achieving accurate flight performance and data reliability, while also mastering the calibration of gyroscopes, accelerometers, compasses, and barometers. By interpreting results, troubleshooting issues, and adhering to best practices, students will gain the ability to ensure optimal UAV operation in various environments. Effective collaboration and documentation will also be emphasized, fostering teamwork and enabling students to communicate calibration processes confidently.

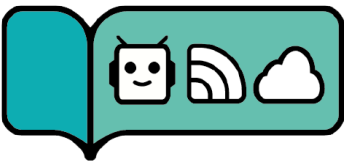
Achievements

The skills that our students will gain are:

- Understanding the importance of calibration for UAV performance and data integrity.
- Identifying key calibration parameters.
- Performing calibration procedures for sensors, compass, and barometer following step-by-step instructions.
- Analyzing calibration results to assess sensor data quality and identify potential anomalies.
- Troubleshooting calibration-related issues and optimizing UAV performance.
- Applying calibration best practices considering location, interference, and environmental conditions.

Required material

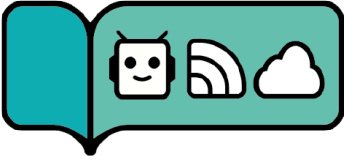
- Drone Mavic Pro
 - DJI Mavic Pro Remote Controller
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Implementation – Calibrating the IMU

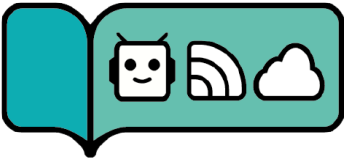
1. Turn on the remote controller and connect it to the mobile device.



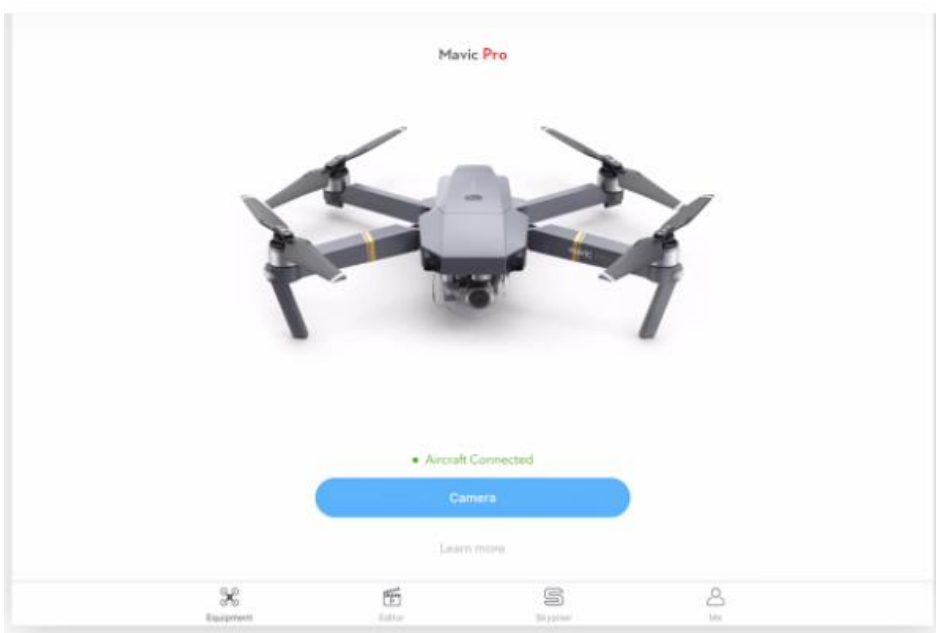


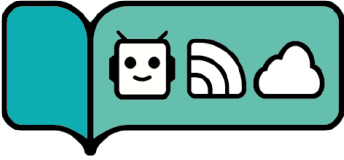
2. Place the aircraft on a level surface with its arms folded and turn on the aircraft.



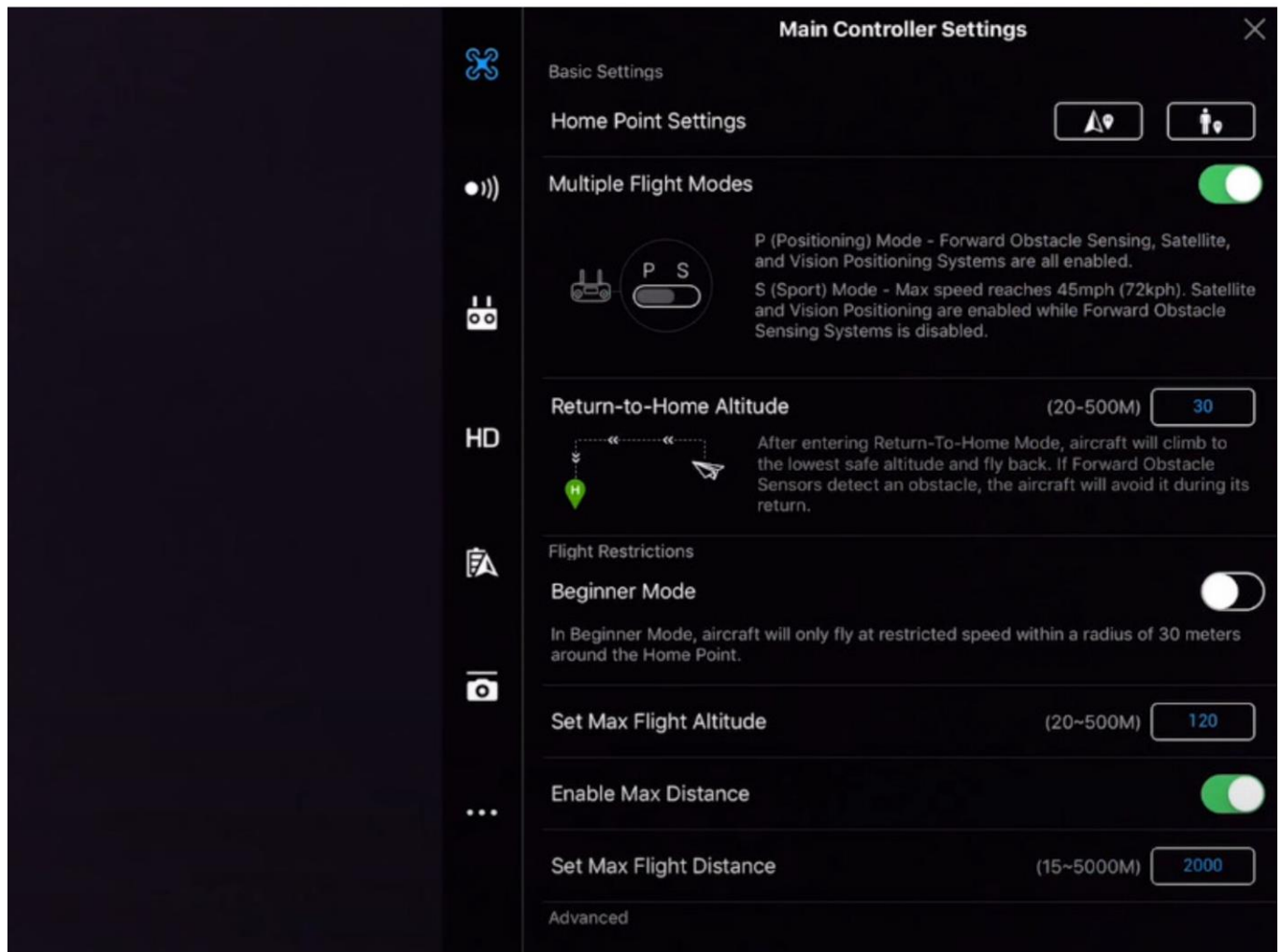


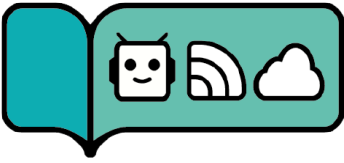
3. Launch the DJI GO App. Enter the Camera view.



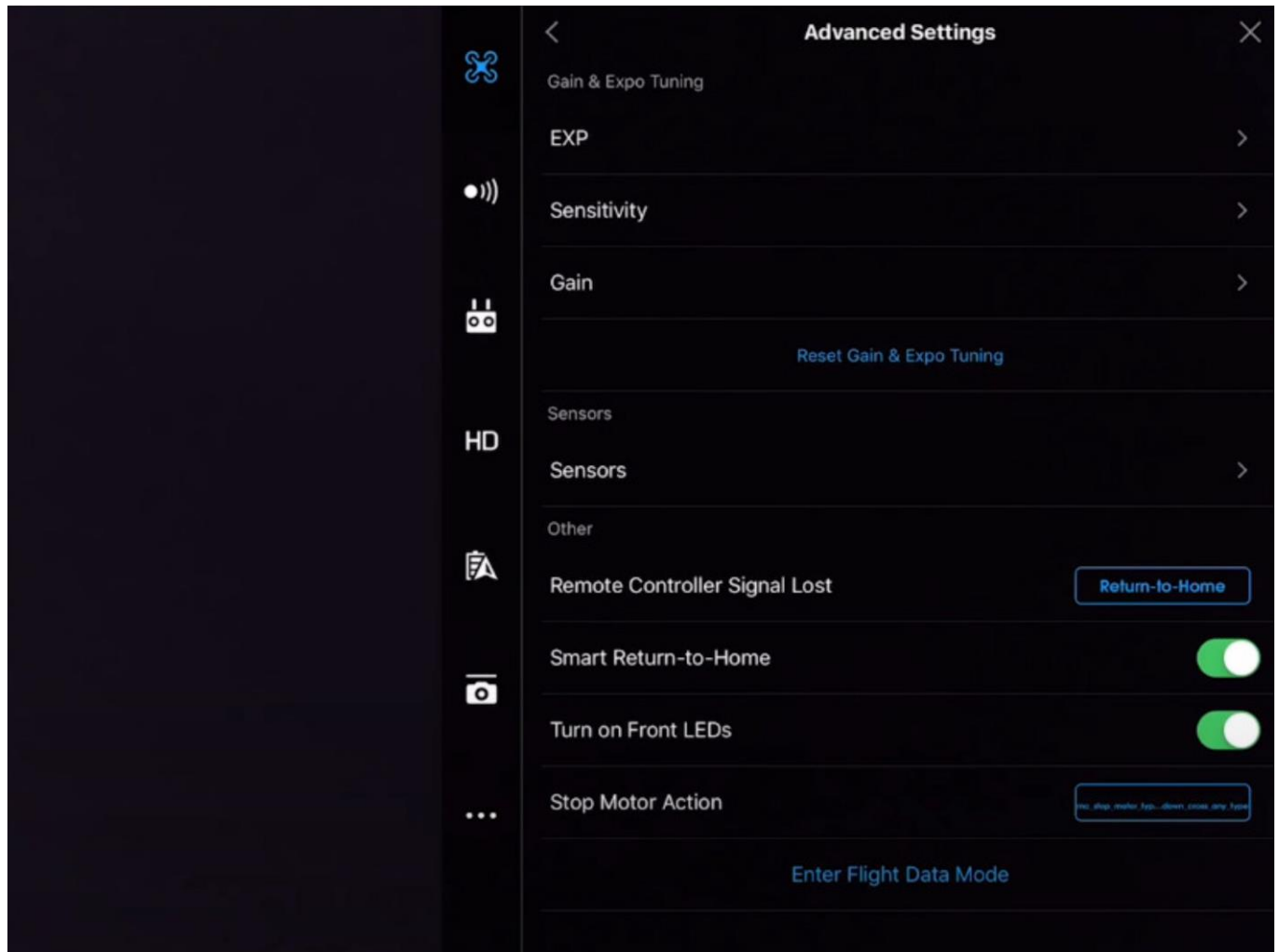


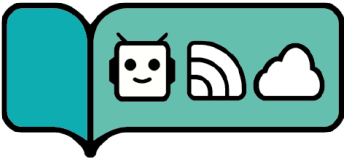
4. Go to Main Controller Settings



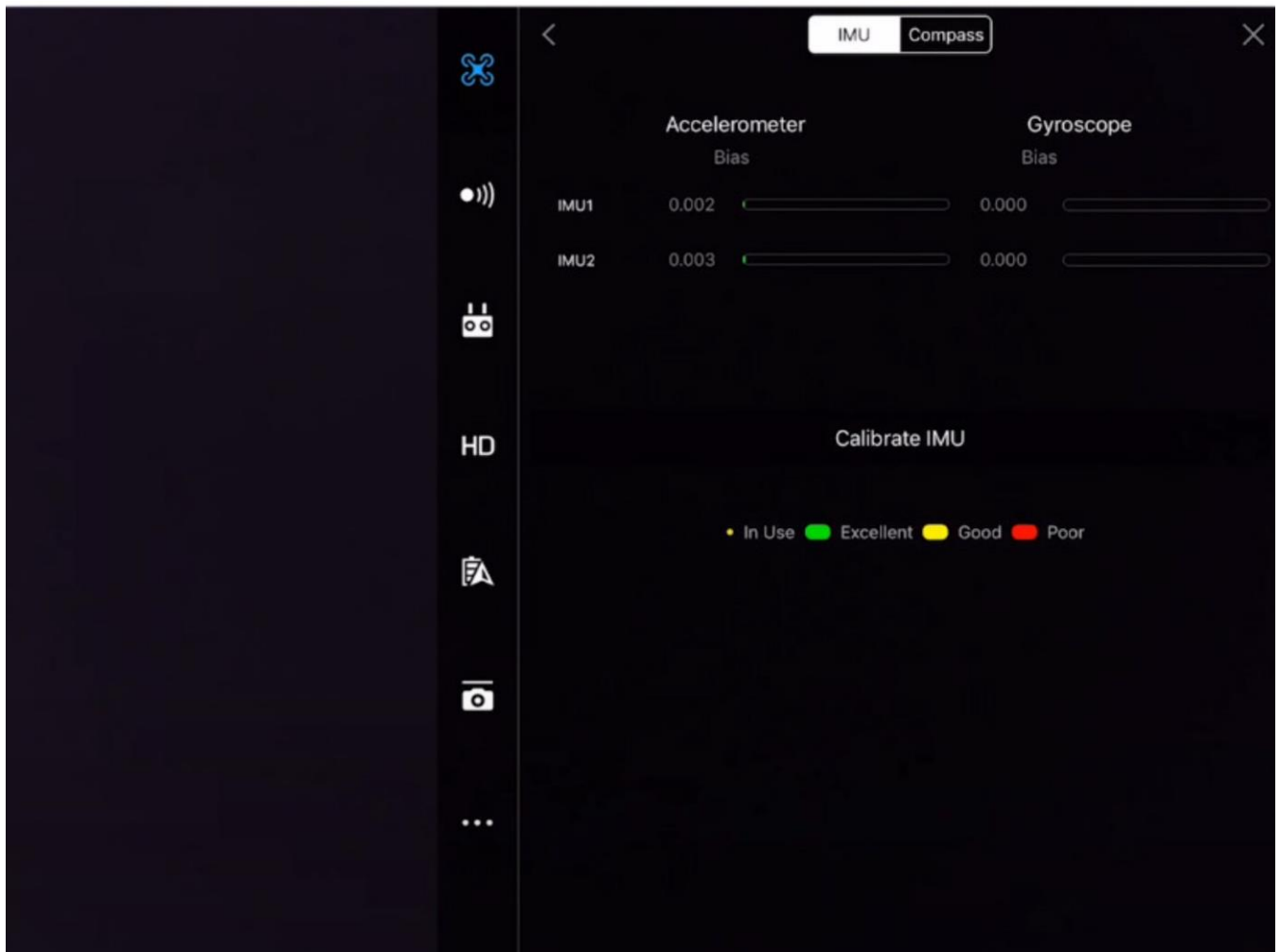


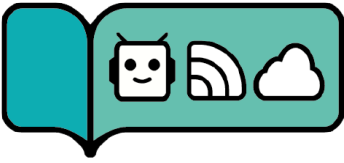
5. Advanced Settings



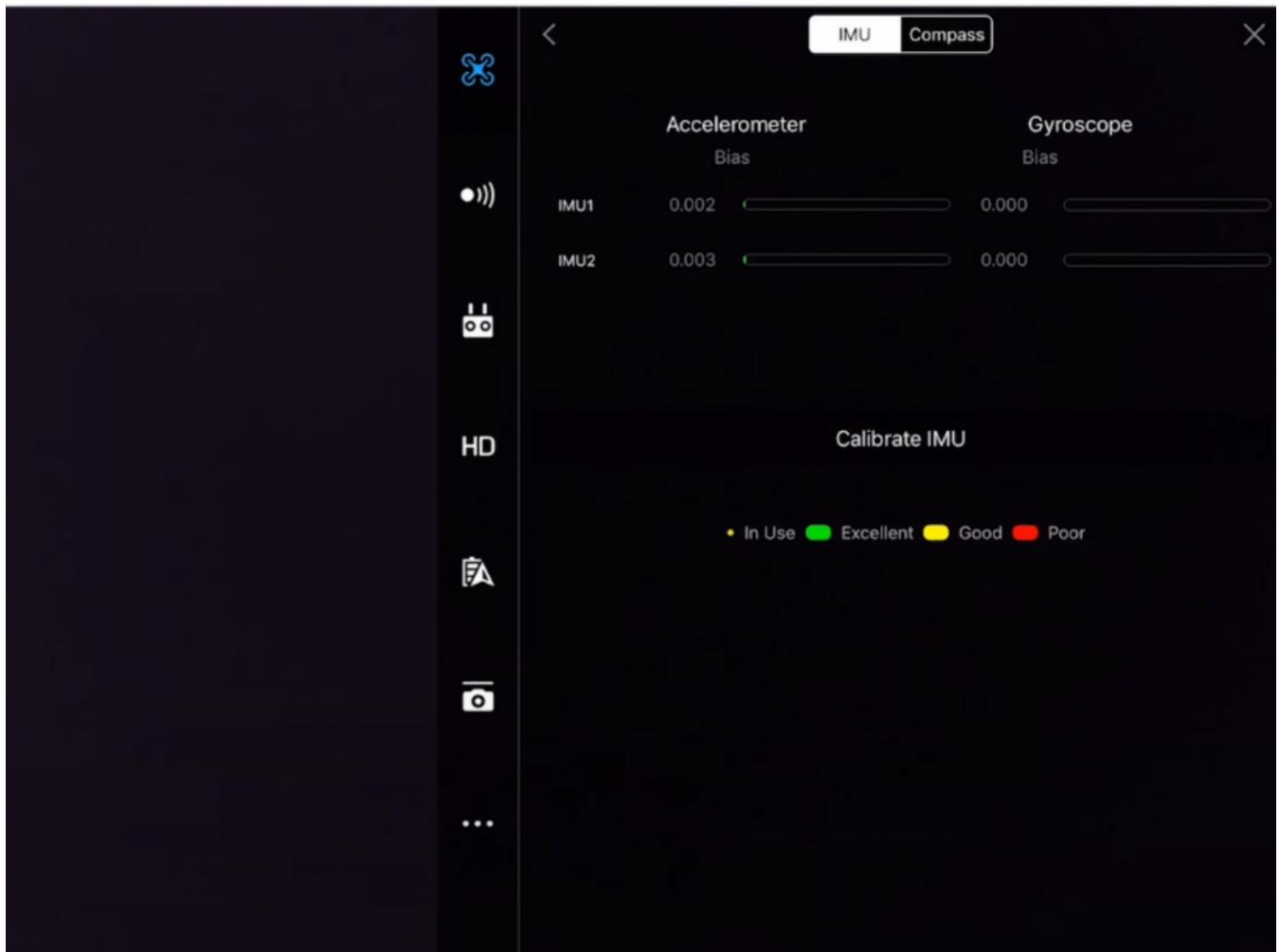


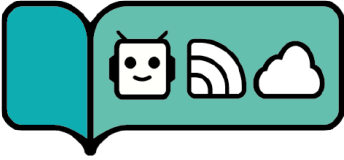
6. Sensors



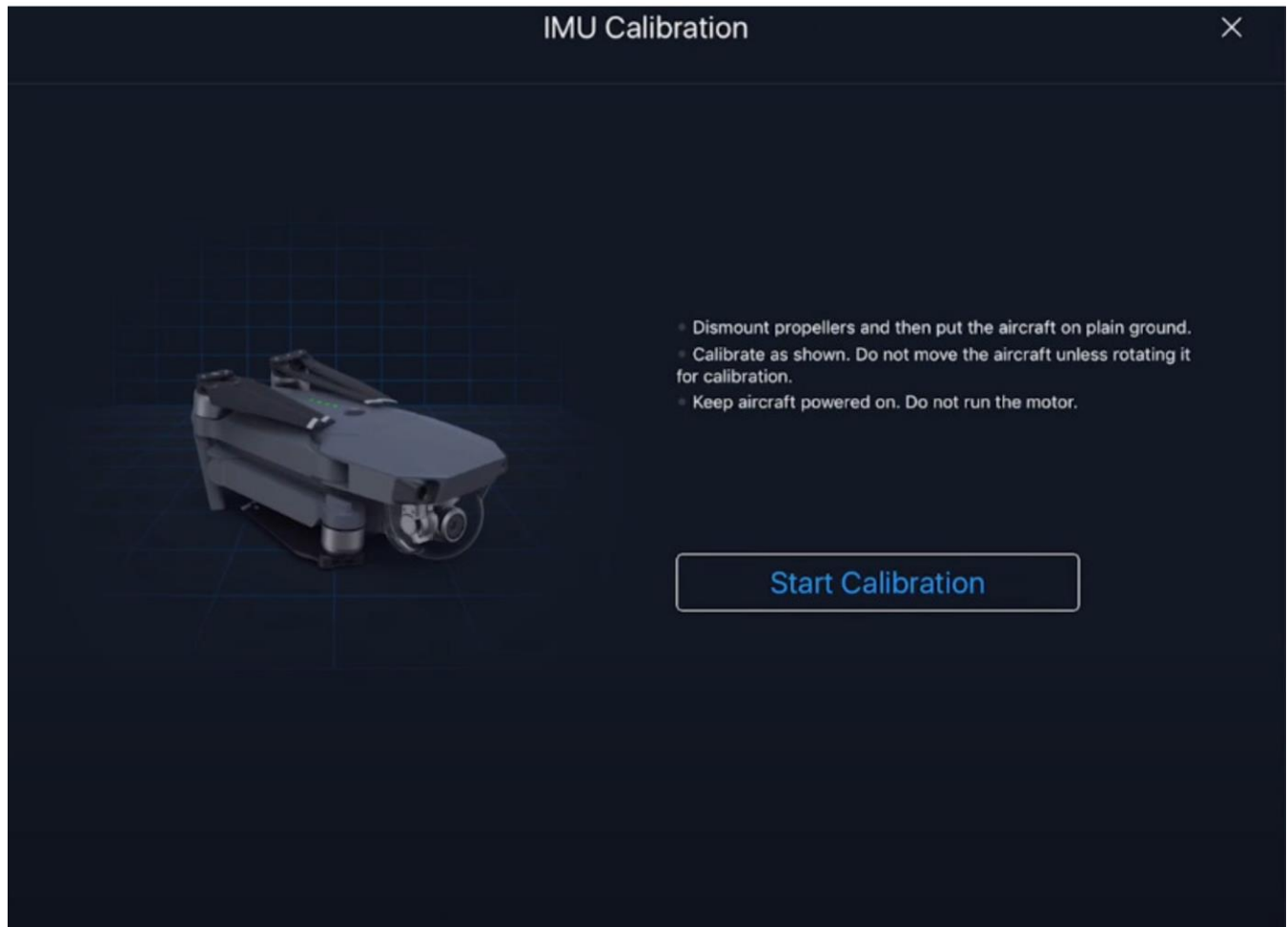


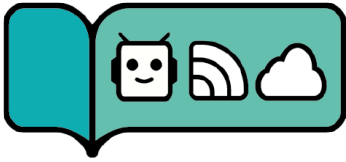
7. IMU and Tap Calibrate IMU





8. Position the aircraft following the instructions in the DJI GO App during calibration.

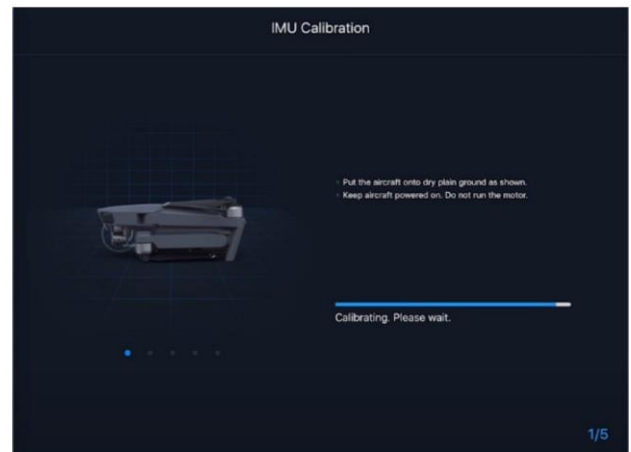




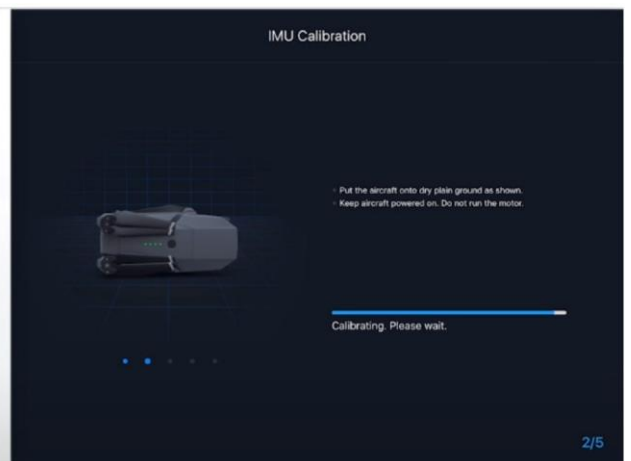
9. Tap to Start Calibration

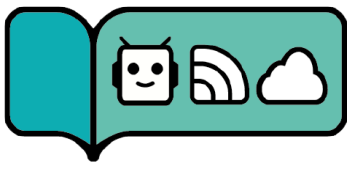
Calibrate in five different direction one after another.

1.

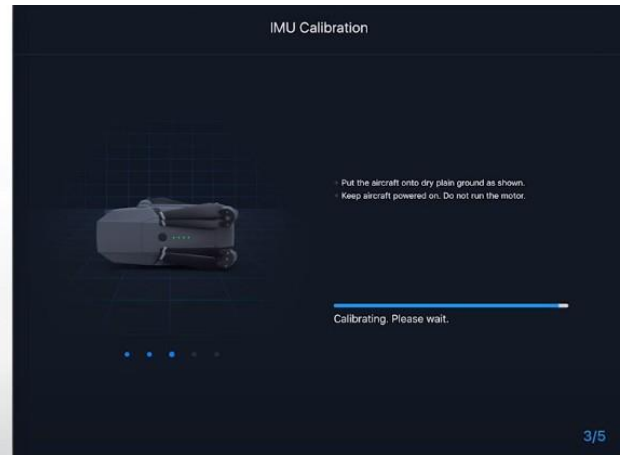


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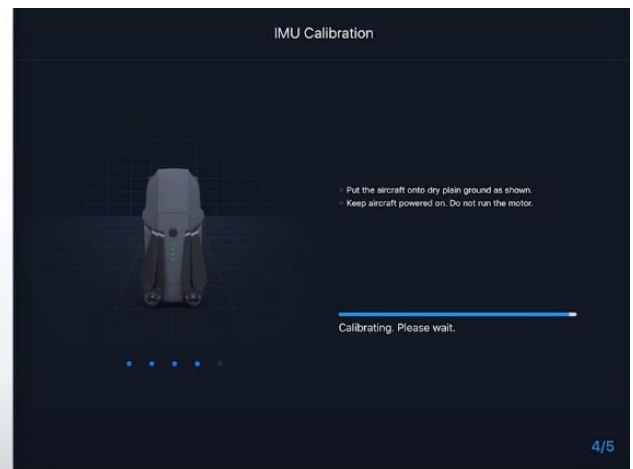


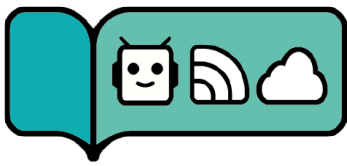


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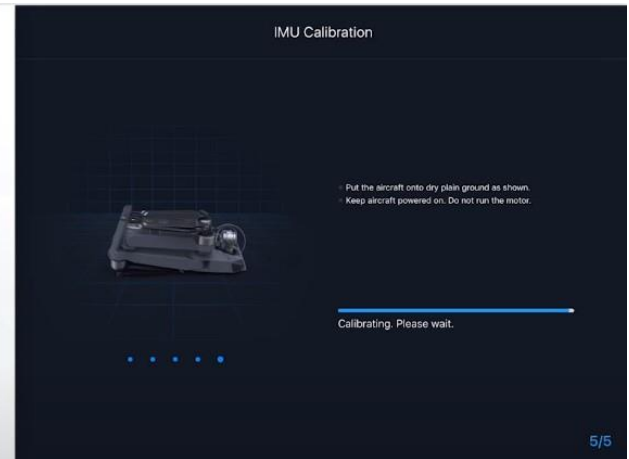


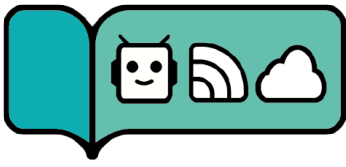
4.



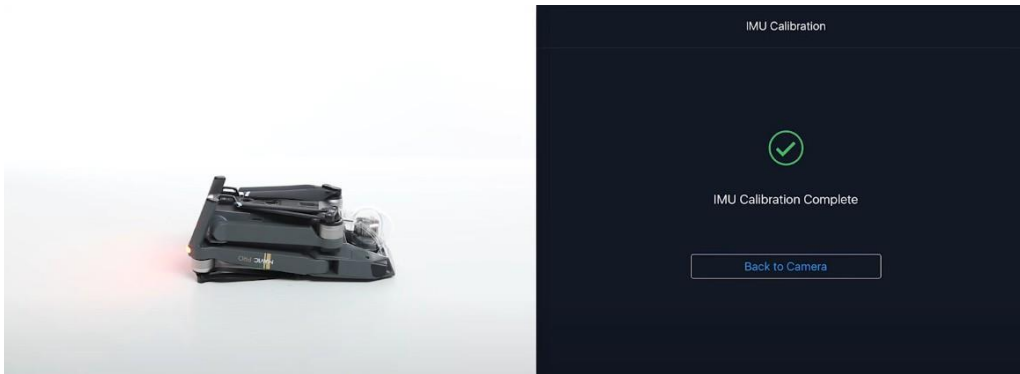


5.





10. After calibration is complete IMU Calibration Complete will pop up in the DJI GO App



11. Tap Back to Camera

Notes

- Make sure not to start the drone with the Combination Stick Command.
 - IMU calibration will fail if the aircraft is not positioned according to the instructions in the DJI GO App.
 - If calibration fails, restart the aircraft, and calibrate the IMU again.
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