



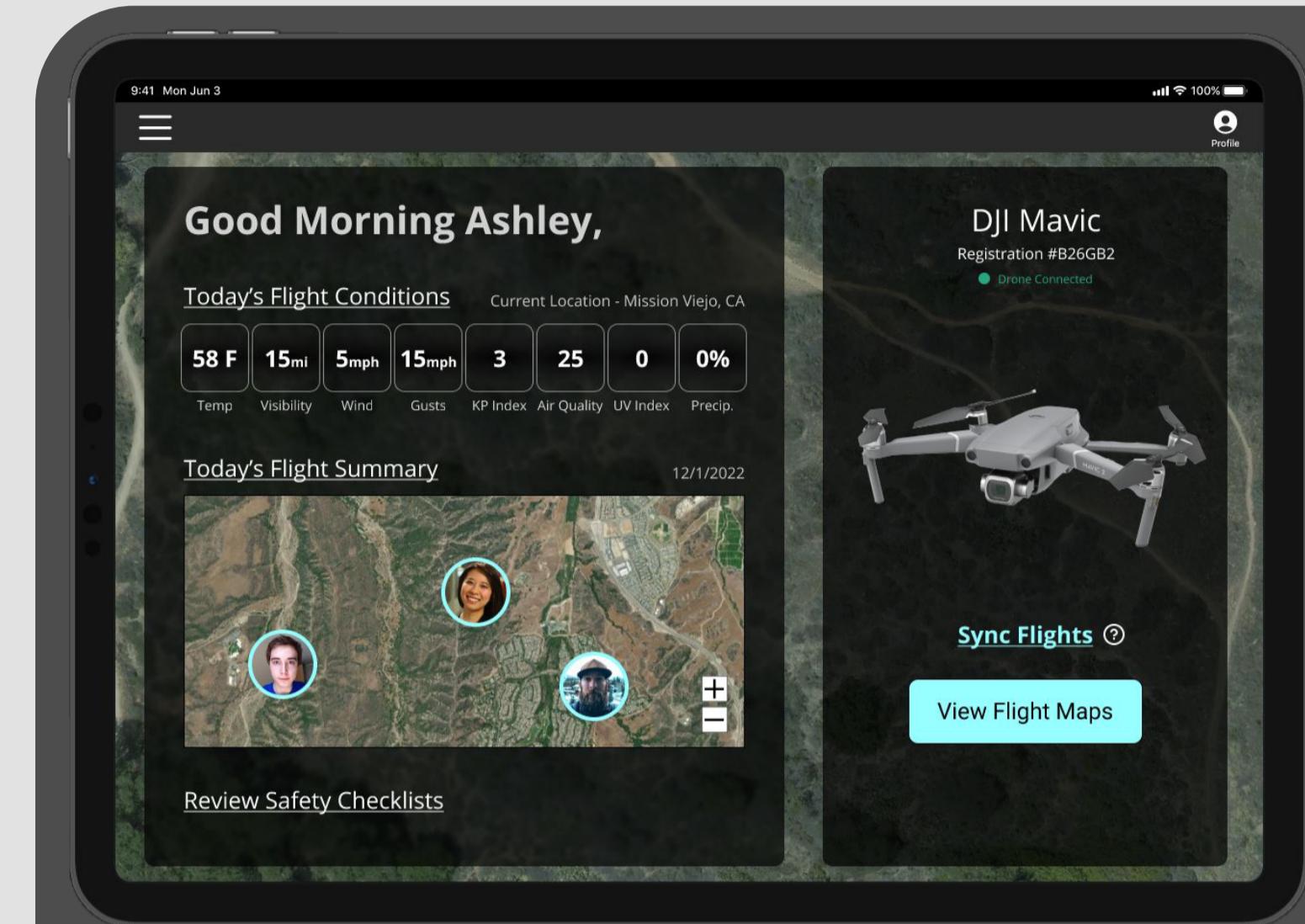
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### Application Concept:

# DRONE TAG

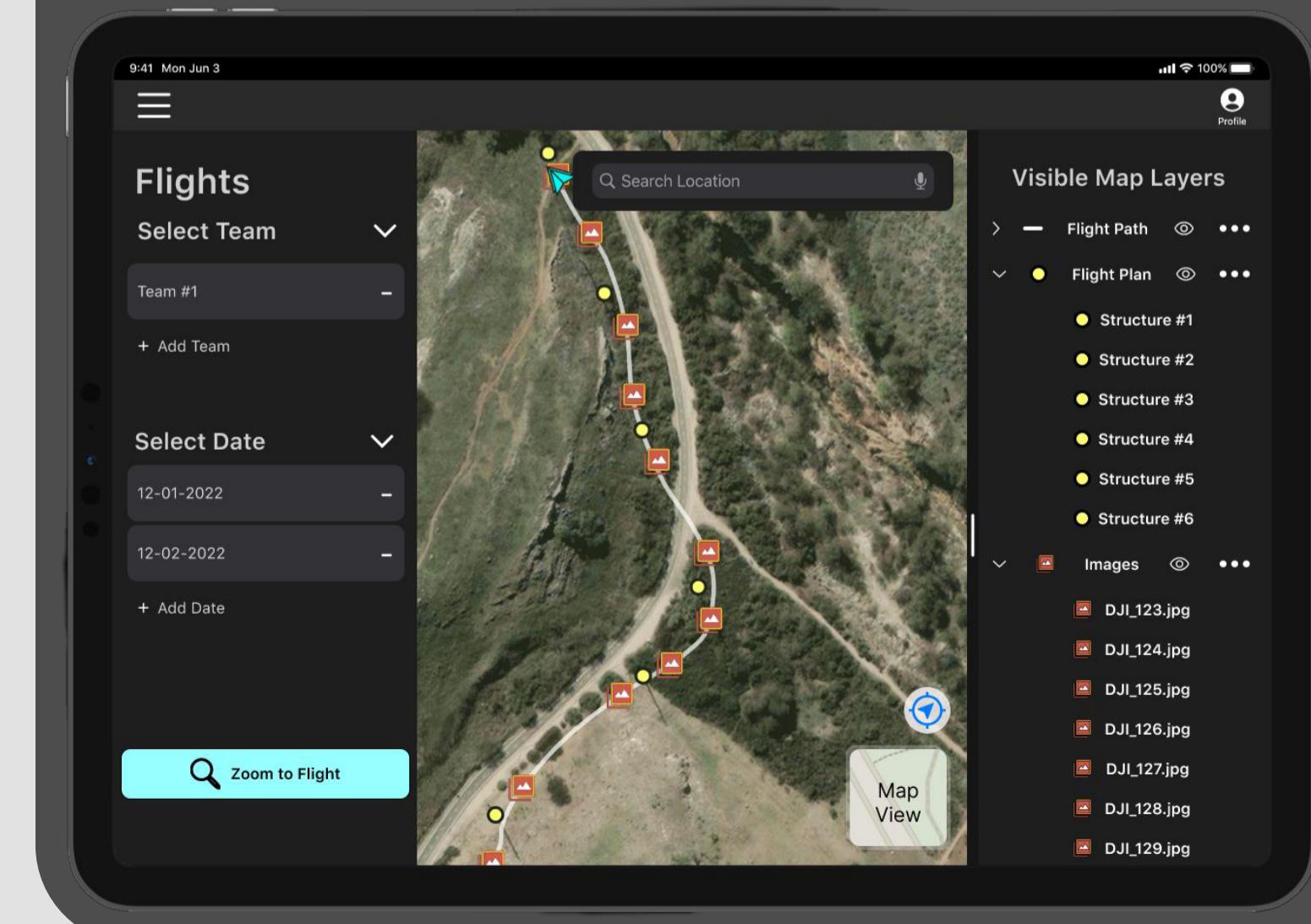
A Drone Data Management System.

Track your team's flight logs with an interactive web map application.



## The Project:

- The concept for this app is inspired by my previous job at a drone surveying company.
- I worked with field teams, which involved drone pilots taking images of electrical infrastructure/towers.
- There were issues with data organization and project tracking, with a lot of time spent sorting through location data, images, and excel files to find out if a project was complete.
- Applications were used for logging pilot flight locations, but they were not easy to reference or user friendly.



# The Problem to Solve:

- Pilots need an easy to use flight tracking app where they can quickly reference flight plans, flight logs and photos.
- Data analysts need a way to quickly view the completed field work and find out which field photos are associated with each asset, to avoid confusion with missing and lost data.

**How might we create an application for pilots & office staff to help view and organize flight data and reduce time spent on manual flight log processes?**

- My goal for this concept app is to address the challenges of current flight logging applications, and create a solution for pilots and office staff to efficiently review flight data.

Tools Used	Team & Role	Timeline	Deliverables
Figma	Solo Project - I created the concept and mockups	Ongoing Project	High Fidelity Prototype
Adobe Illustrator	I built the user persona based on previous coworkers project debriefs		
Adobe Photoshop	Received feedback from a ux manager		
ArcPro			

# The User



## Drone Pilot & Photographer

- Works out in the field flying drones
- Pain Points
  - Dislikes the current flight logging application and struggles with reviewing past flights
  - Overwhelmed when they cannot figure out which images are associated with a project



## Project Coordinator

- Manages the field team's progress from the office
- Pain Points
  - Manually sorts through the flight logs drone pilots upload
  - Downloads flight logs, flight plans and georeferenced photos separately and reviews the data in Google Earth
  - Sorts through excel files to find project dates

## Feature Brainstorm:

Field plan maps	Flight plan calendar view	Interactive map view	Preflight Safety Checklists	Error notifications for missing data in forms	Sorting flight plans by day, pilot, location	Join documents and photos feature	Alerts for hazards and airspace in the area	Field points of interest in map view	Submit progress reports	Batch edit GIS points	Multi-select photos and group them	Timelapse of flight on map
Edit notes for field revisits	Notification alert reminders to pilots	Search bar for documents and images	Progress bar for flight plan completion	Quality check photos	Feedback comment forum between office and field	Add note to photo location	Auto populate pre & post flight checklists	View flight path	View photo locations	View GIS layers	Link photos to GIS layers	Draw on map - measure distances

# Currently Used Flight Logging Application - Airdata

The app focuses on viewing drone GPS logged flight locations. The data recorded from the drone flight is synced into their application and saved on a map.

## Features Include

- Flight paths displayed in a google map preview, flights can be downloaded as a KML file
- Filter flights by pilot
- View distance, altitude and drone speeds from a flight
- Log equipment and drone maintenance
- Generate checklists and reports

## Missing Features

- Flight logs are not visible in an interactive web map, each flight has to be downloaded
- Cannot view flights for the entire day, range of days, or multiple pilots at once
- Cannot add your own data and flight plans into the map view

The image shows two screenshots of the Airdata UAV application. The left screenshot displays a list of flight logs. The first flight log is highlighted with a red box and a red arrow points from it to the right screenshot. The right screenshot shows a detailed view of the first flight log, Nov 29th, 2022 11:16am, from Aliso Viejo. It includes a map view with a yellow flight path outline, flight statistics, and a camera feed.

**Airdata UAV**

Nov 29th, 2022 11:27am  
Aliso Viejo

Nov 29th, 2022 11:16am  
Aliso Viejo

Feb 19th, 2022 09:54am  
Dana Point

Feb 19th, 2022 09:09am  
Dana Point

Mar 19th, 2021 04:04pm  
Laguna Beach

Mar 18th, 2021 12:50pm  
Mission Viejo

Jan 4th, 2021 10:16am  
Ramona

Jan 4th, 2021 10:15am  
Ramona

Jan 4th, 2021 10:04am  
Ramona

Jan 4th, 2021 09:45am  
Ramona

Jul 12th, 2020 09:30am  
Dana Point

May 21st, 2020 10:23am

OK TO FLY DATA START

**Aliso Viejo/Nov 29th, 2022/11:16am**

GENERAL POWER SENSORS CONTROLS WEATHER MEDIA

Overview Details Equipment Notifications

Map Satellite

Add tag

Nov 29th, 2022 11:16AM (-08:00)

Plane Name: Ashley-MAVIC PRO

Flight Air Time: 04m 58s

MavicPro/IOS DJI 4.3.42

Takeoff Battery: 99% 12.7v

Landing Battery: 80% 11.6v

Total Mileage: 2,165 ft

Max Distance: 808 ft

Max Altitude: 370.7 ft

Max Speed: 20.80 mph

Max Bat Temp: 92.8 f

Tips: 3 Warnings: 0

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Airdata

## Competitive Analysis

# Field Data Collection Apps

Apps focused on the management of field workers. They incorporate field data collection and location tracking maps, but are not created with drone missions in mind.

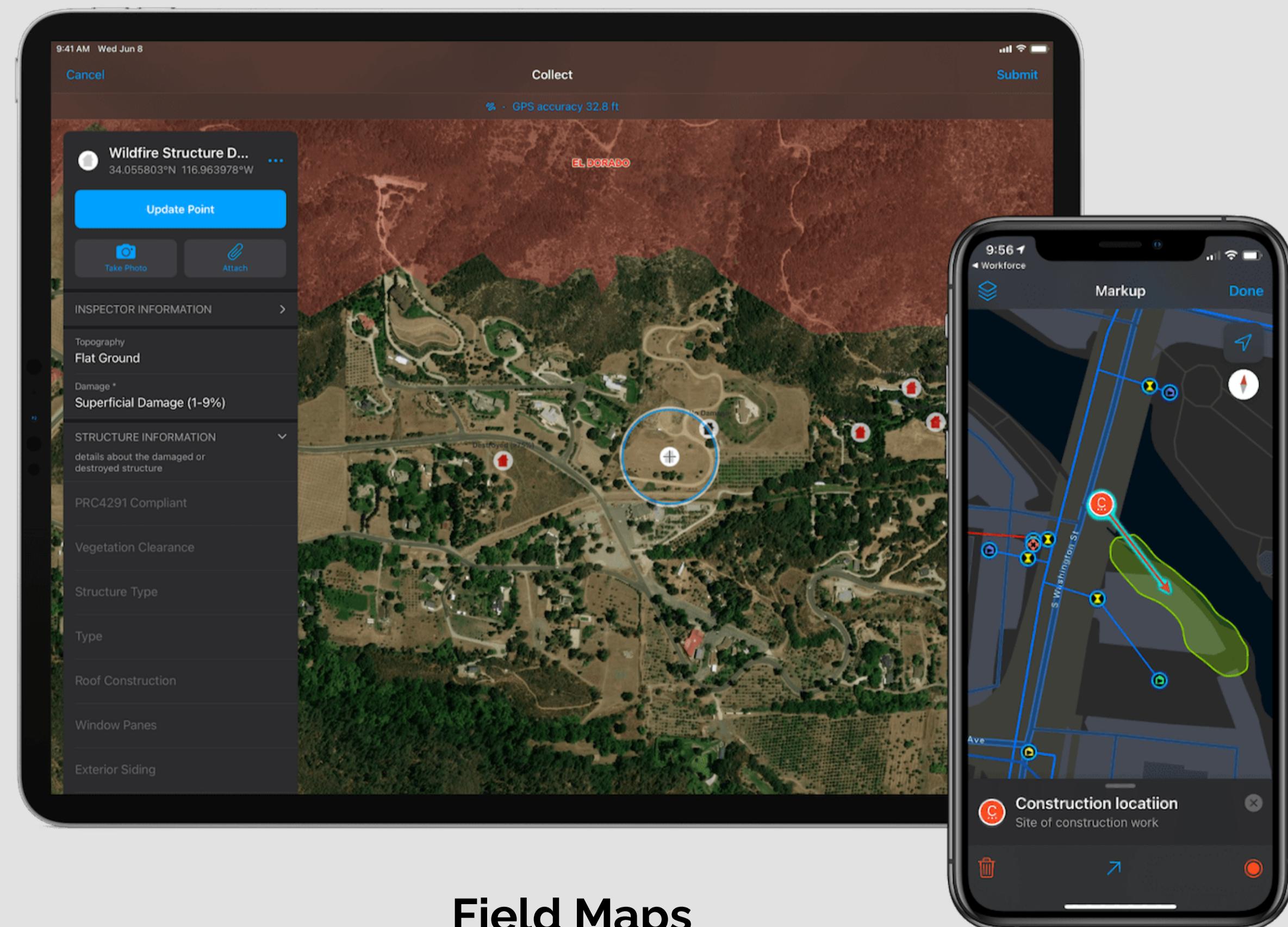
Examples include: Field Maps, Mergin Maps, Titan GPS

## Features Include

- Map Viewing
- Map Markup
- Data Collection - GPS receiver capture
- Asset Inspection
- Location Tracking
- Smart Forms - Create and edit map attributes

## Missing Features

- Is not drone or flight focused
- Cannot import flight logs
- Can save photos on a map from the iphone/ipad camera library but does not import batches of georeferenced photos



Field Maps

## Competitive Analysis

# Autonomous Flight Apps

Apps focused on creating flight plans and flying the drone autonomously to create orthomosaic imagery, point clouds and 3D meshes. They incorporate flight planning, fleet management and data visualization, but are not focused on importing flight data for long term organizational purposes and historic record keeping.

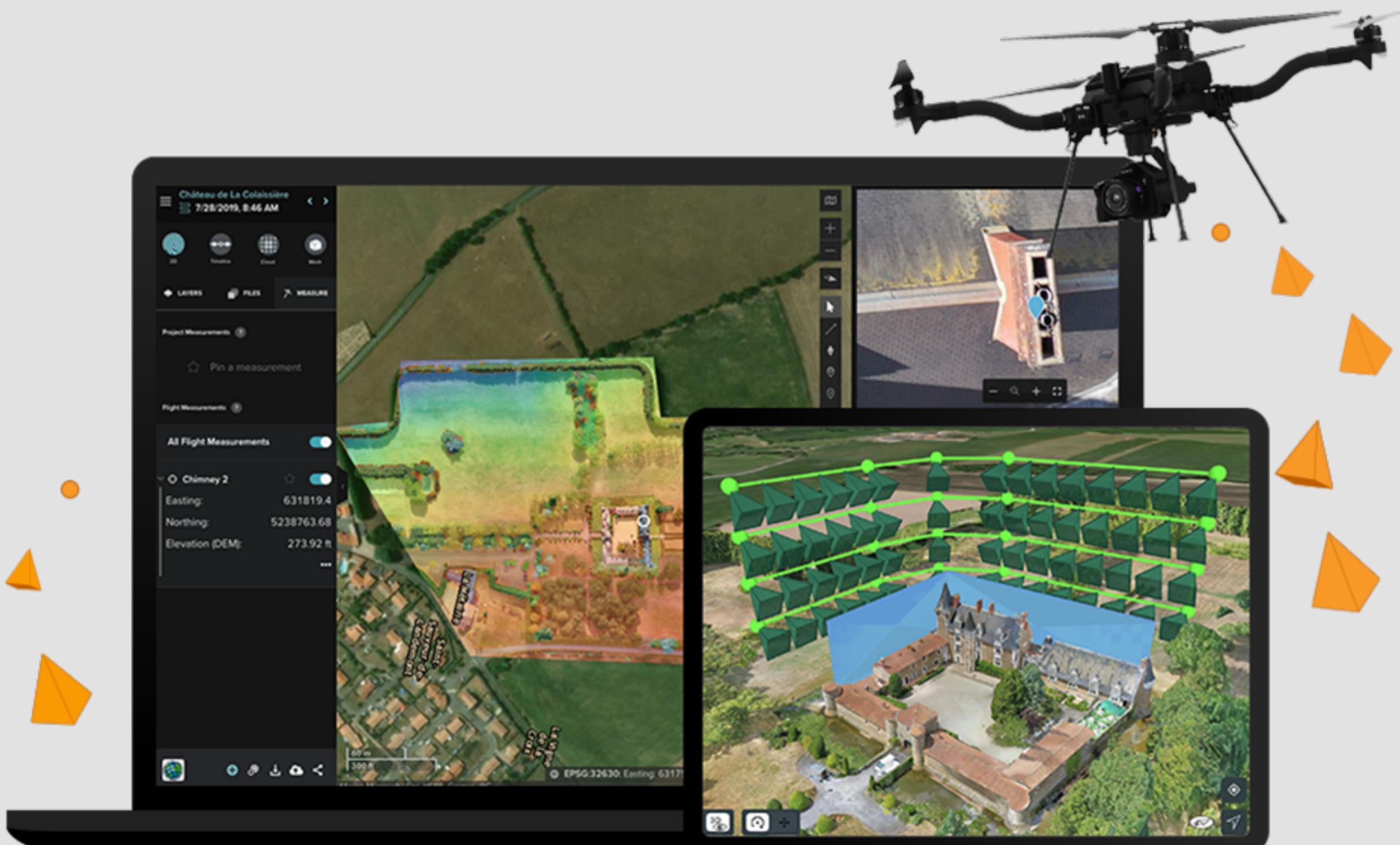
Examples include: Site Scan, Pix4D, Maps Made Easy

### Features Include

- Flight plans geared for autonomous flights
- Fleet management - Team members and drone information tracking
- 2D and 3D mapping and analytics from drone imagery
- Elevation and Volumetric tools
- Safety Checklists

### Missing Features

- Does not sync flight logs from previous manual flights
- Flight plans are grid based and do not include point features
- Photos locations are mapped but metadata is not visible in the app



**SiteScan**

## Feature Prioritization:

An application with an interactive map, combining

Flight Plan Locations

Post Flight Log Data, including the path flown and the photo locations.

## User Flow:

- Open the application
  - Create An Account
    - Add pilot info & drone information
    - Connect DJI Fly App API
      - The app transfers over the GPS coordinates and image meta data recorded by the drone in flight
  - Homepage
    - Review Feed
    - Sync flight logs
      - Pop up - Connects to your drone's flight app and transfers flight data coordinates
  - View Flight Maps - Call to Action
    - Review flight logs and the flight plans posted by the office staff
    - Sort flight plans and flight logs by date & team

# Wireframes

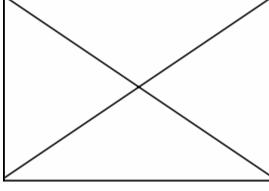
## Homepage

Good Morning Ashley,

Today's Flight Conditions

Current Location - Mission Viejo, CA

My Drone Name



Sync Flights

View Flight Maps

Today's Flight Summary



Review Safety Checklists

Map

Profile

## Map View Page

Team #1

Select Date

12/1/2022

+ ADD DATE RANGE

Flights

12/1/2022 [Zoom to All](#)

Zoom to

10:00AM

10:17AM

11:03AM

Sync Flights

ADD IMAGES

ADD MAP LAYERS +

Map View

Cache Offline

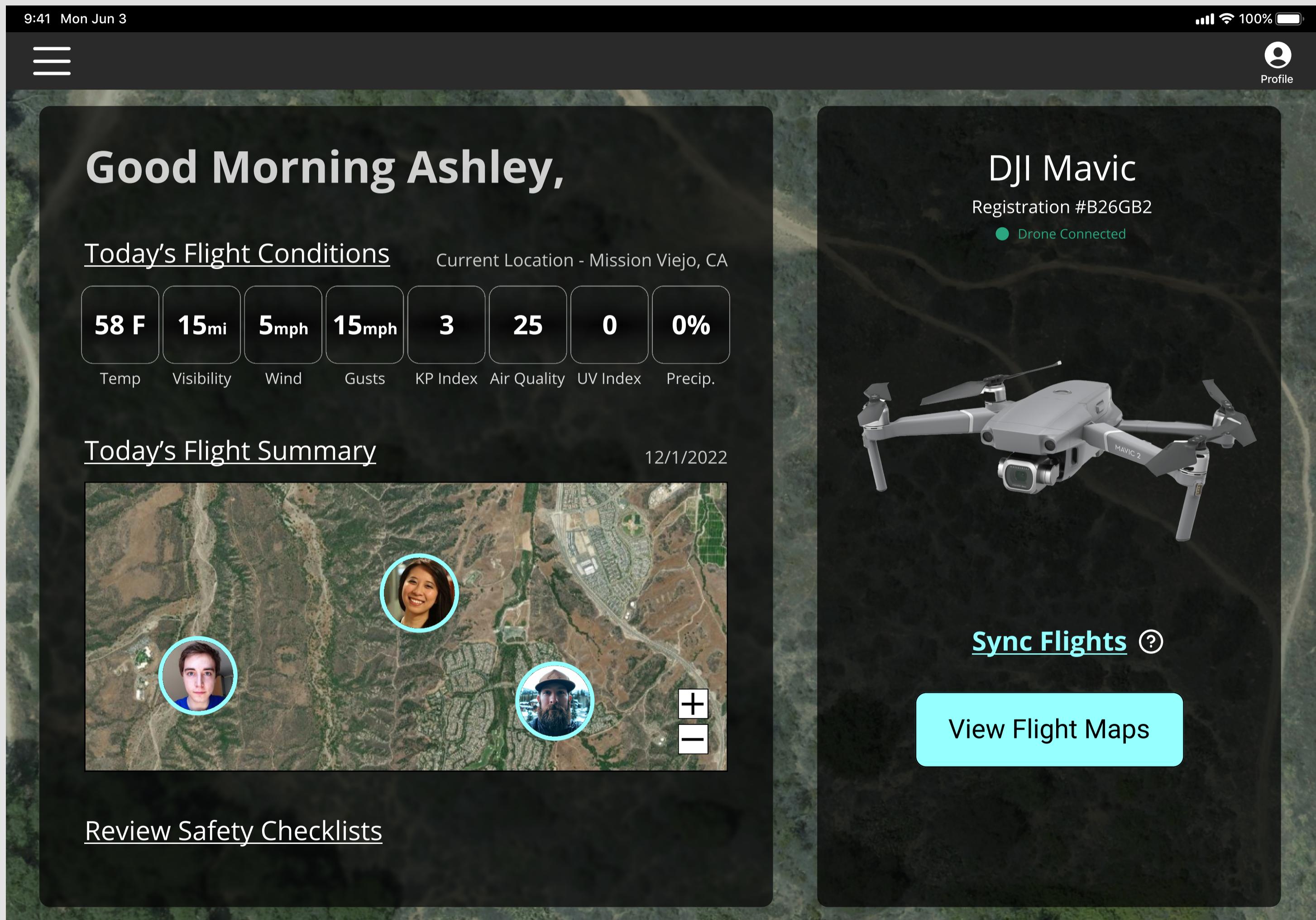
Zoom to My Location

Satellite/3D View

# Application Homepage

## High - Fidelity

Newsfeed for Pilots to view each day



Drone that is connected to this account

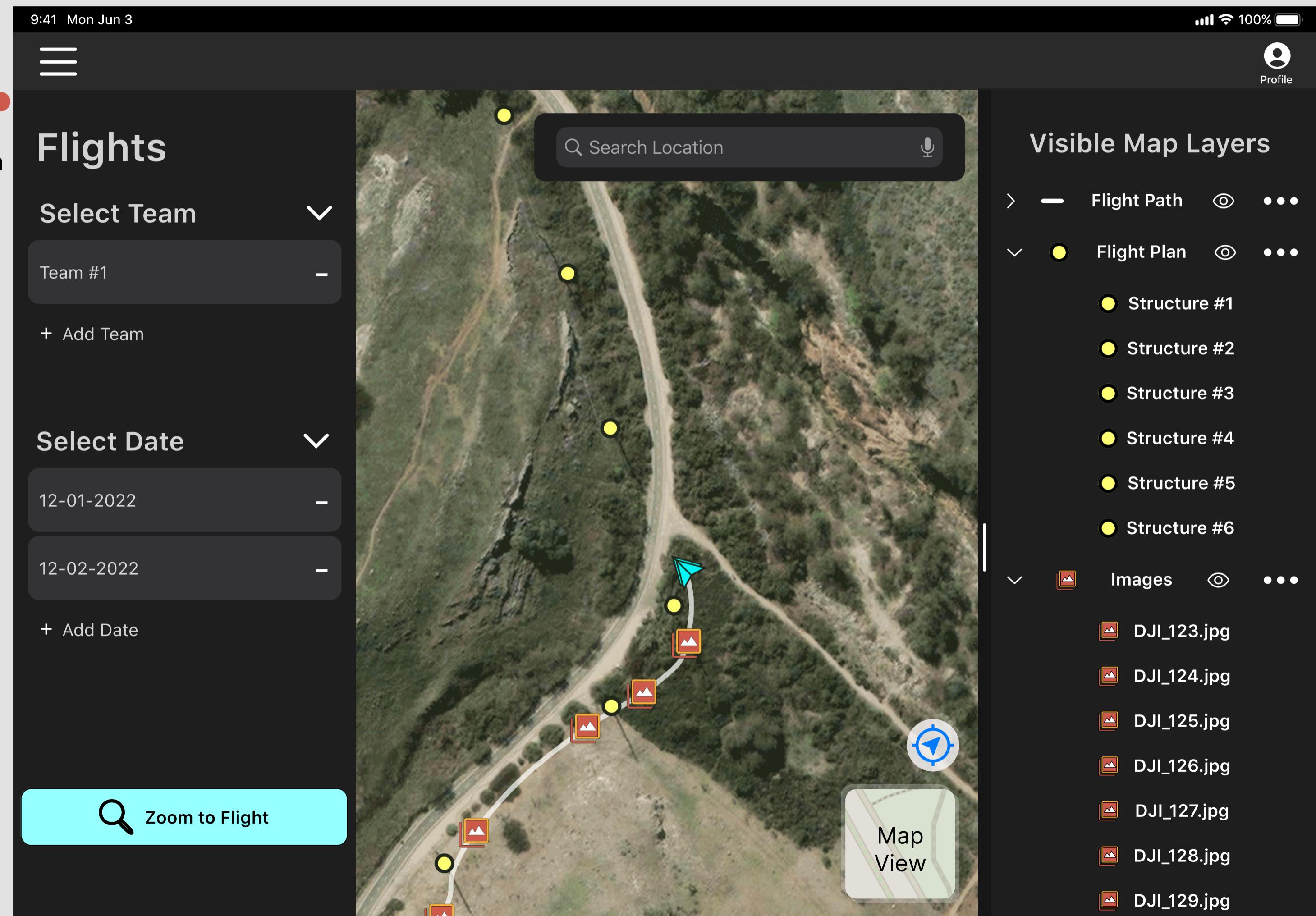
- green status circle

Upload drone data - opens pop up that downloads data from the application that is used to fly your drone

Call to Action Button to view main flight maps page

# Map View Page

## High - Fidelity



Flights from each team are available to view in the map. They can be filtered by team and date.

Click on Zoom to flight to the view filtered results

Enter location coordinates to zoom to an area and view the flights nearby

List of map data points, flight logs and images that visible in the map view

Flight Plans and other GIS layers can be uploaded

More Options to change the Symbology to improve background contrast

Select any point/icon to view a pop up with more information

Change the Map View from Satellite view to a Terrain View or 3D View

Page can be adjusted to make the map view larger