

May 13, 2022

HOW I LEARNED TO LOVE THE RPAS

OR, FLYING DRONES SAFELY AND LEGALLY IN CANADA

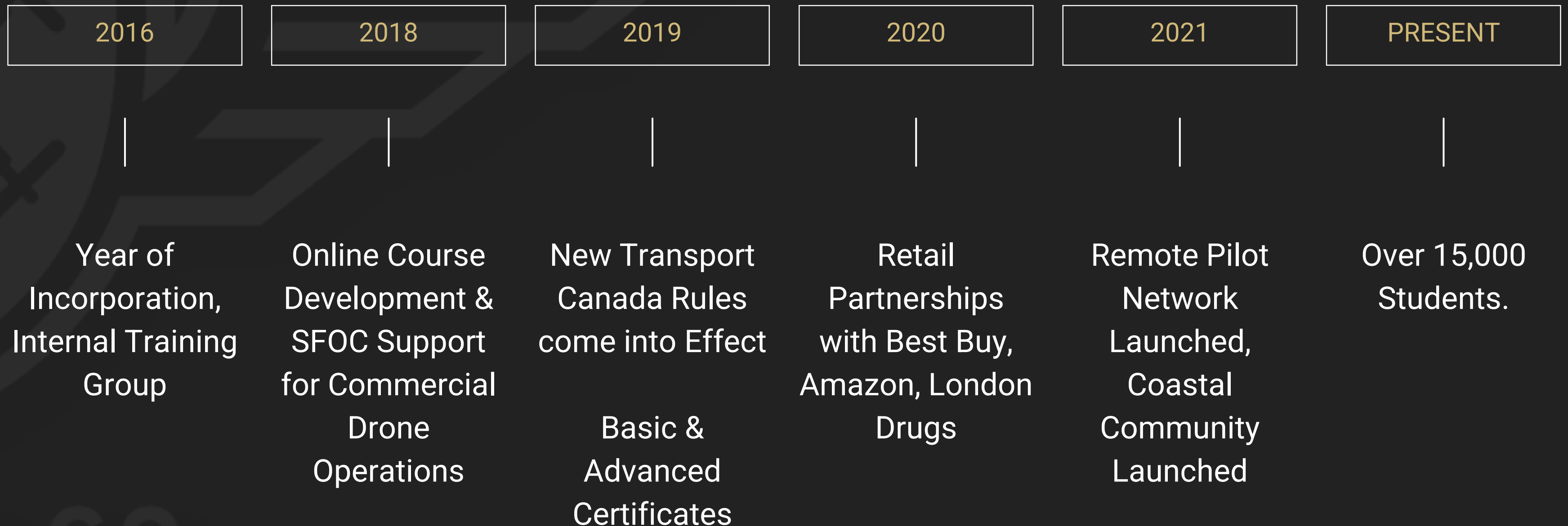


DRONE CO.

Who the heck is Ian?



Our Story in a Timeline





● OUR COMPANY'S MISSION:

1

make the skies as safe and efficient as possible by providing the best online and in-person drone training.

2

broker customer demand with professional drone pilots like you across Canada.

3

support and serve the industry through consulting and guidance for Advanced operations.

1

June 2019 - New Rules
- TC Self Declared
Training Organizations
- now over 100!

2

Over 66,000 Certified
Drone Pilots, 6000 of
them with Advanced
Certification

3

Over 63,000 Drones
(RPAS) Registered in
Canada

4

Global industry already
valued at US \$23B in
2021

Industry Overview

A black drone is shown from a top-down perspective, resting on a surface of dark, irregular gravel. The drone's arms and propellers are visible, and the background is a dense field of similar gravel.



Ornithopter / Flappy Birds



Multi-Rotors Bi / Tri / Quad / Hex / Octa
VTOL / Blender Birds / "Drones"



Fixed Wing Horizontal Takeoff / Planks

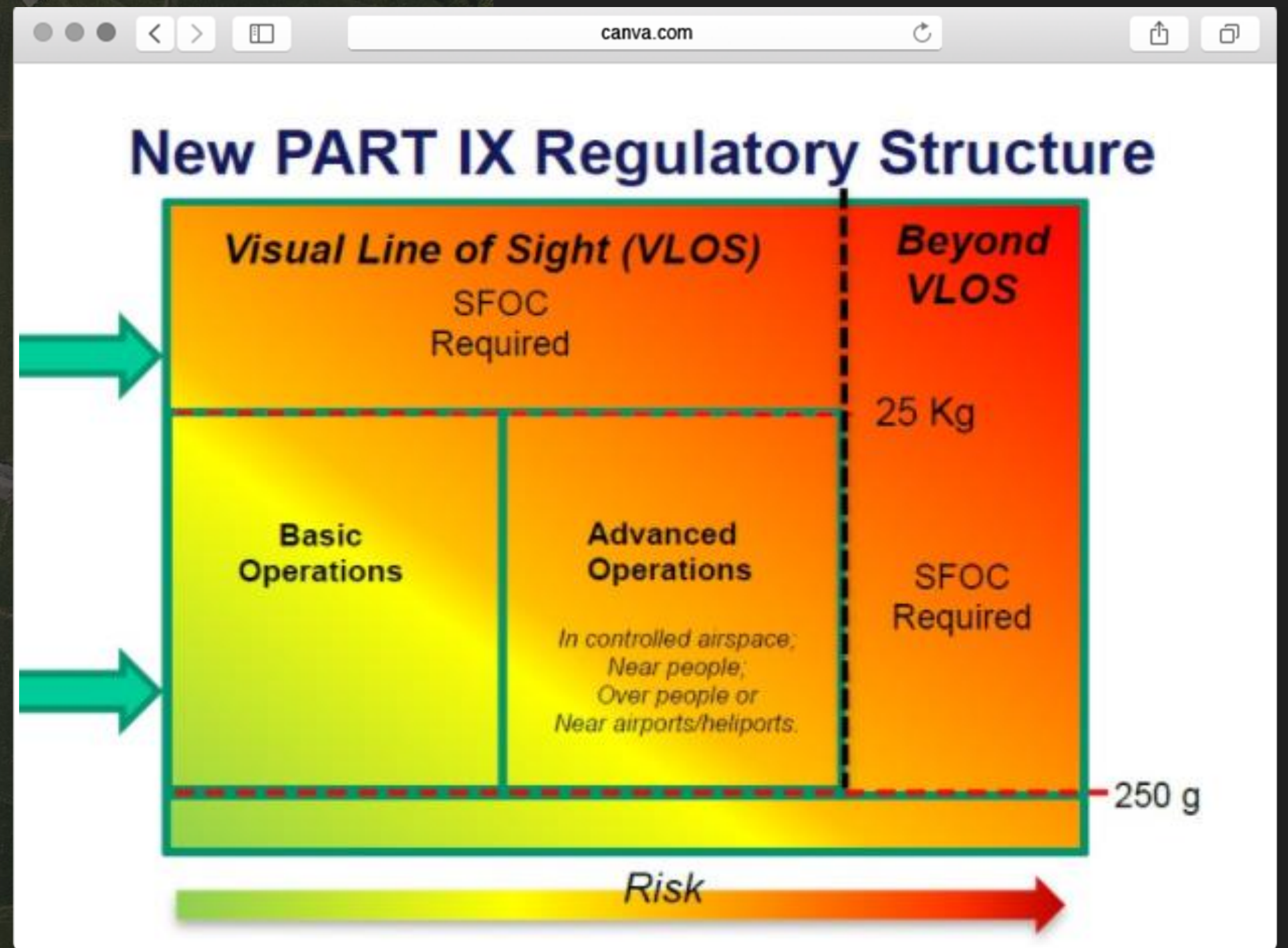


VTOL / Fixed Wing Hybrids / Magic &
Wizardry

Types

OF DRONES / RPAS

Licensing & Regulatory Framework



Weight Classes

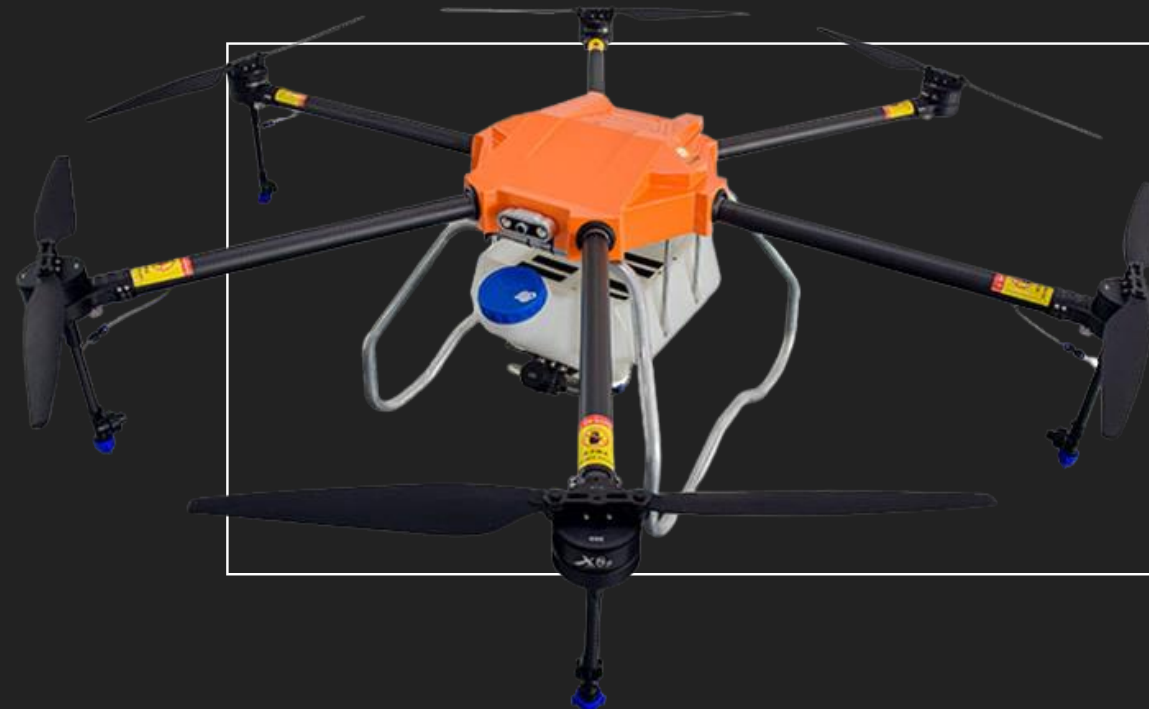
OF RPAS



Micro Drones (uRPAS) up to 249g
"This feels so wrong but it's legal"
Category



Small Drones (250g to 25kg)
No Certificate, No Fly
(Basic or Advanced Req'd)



Heavy Lift Drones (25kg+)
Advanced + SFOC Time

Operations Categories

Micro, Basic, or Advanced

Micro

0-249G

CARS
900.06

CYR

Recommendation

TC AIM^sRPA 2.0

Basic

250G-25KG VLOS

CARS
900.06

CY

CA

<100'
from
People

<3NM
Airports

<1NM
Heliports

Advanced

250G-25KG+, VLOS, BVLOS

CARS
900.06

CYR

CA

OVER
PEOPLE*

SFO
C

The micro RPAS Category

0-249G WEIGHT CLASS

CARS
900.0

6

The "Golden RPAS Rule" CARS 900.06 - "No person shall operate a remotely piloted aircraft system in such a reckless or negligent manner as to endanger or be likely to endanger aviation safety or the safety of any person. " - aka "don't be an idiot."



CARS 601.04 (2) - "No person shall operate an aircraft in Class F Special Use Restricted airspace unless authorized to do so by the person specified for that purpose in the Designated Airspace Handbook."

TC AIM
RPA 2.0

Transport Canada Aviation Information Manual - RPA Chapter Section 2.0 - (p. 429)
"Rules of Thumb" - **Maintain VLOS, <400' AGL, Avoid People, Infrastructure, Aerodromes, Avoid Aircraft, Inspect your mRPAS.**

Where can you Fly?

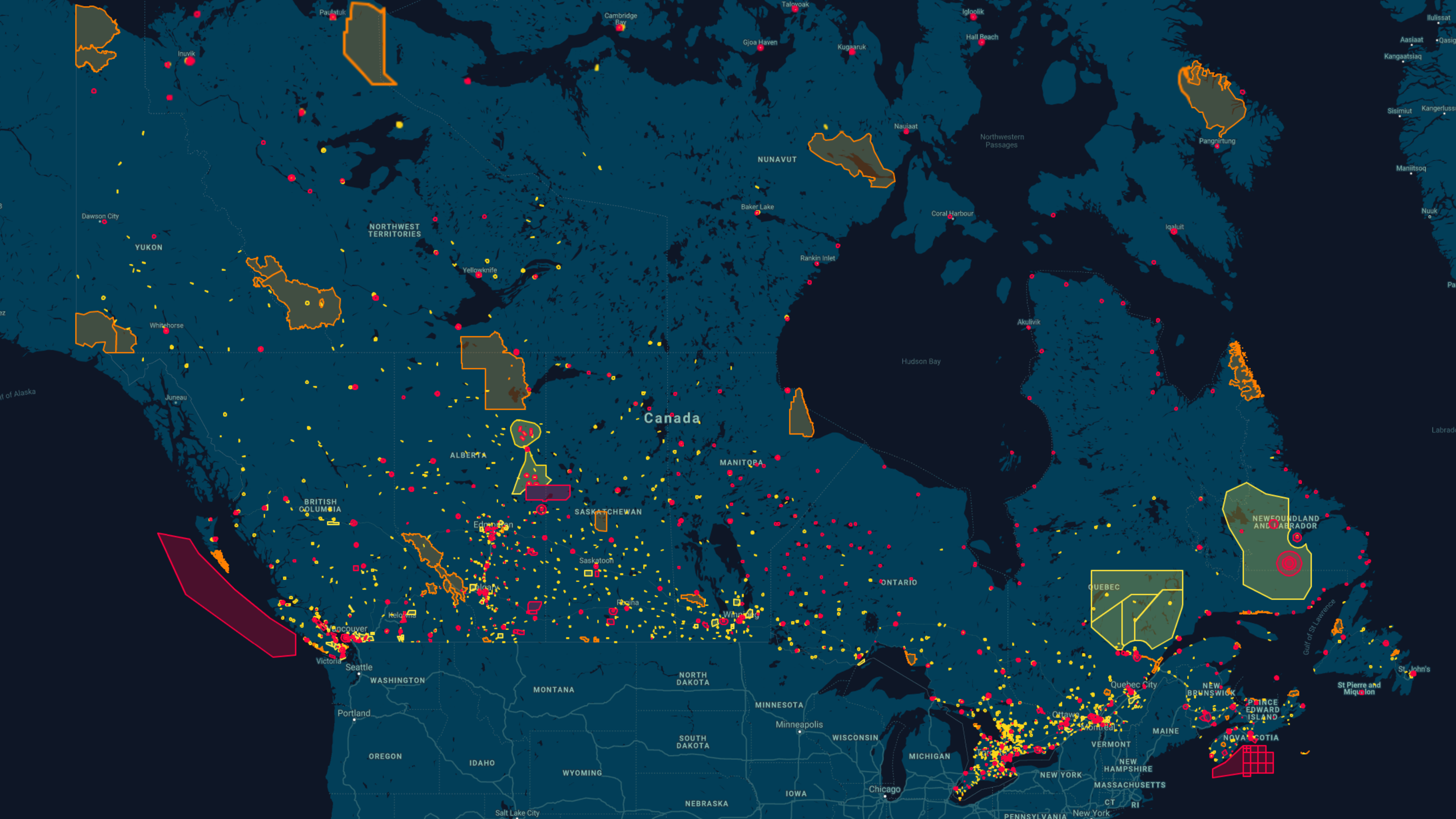
BASIC VS. ADVANCED OPERATIONS

Basic Operations

- Near Aerodromes
- >3NM from Airports
- >1NM from Heliports
- Outside Controlled
Airspace
- >100' from Bystanders

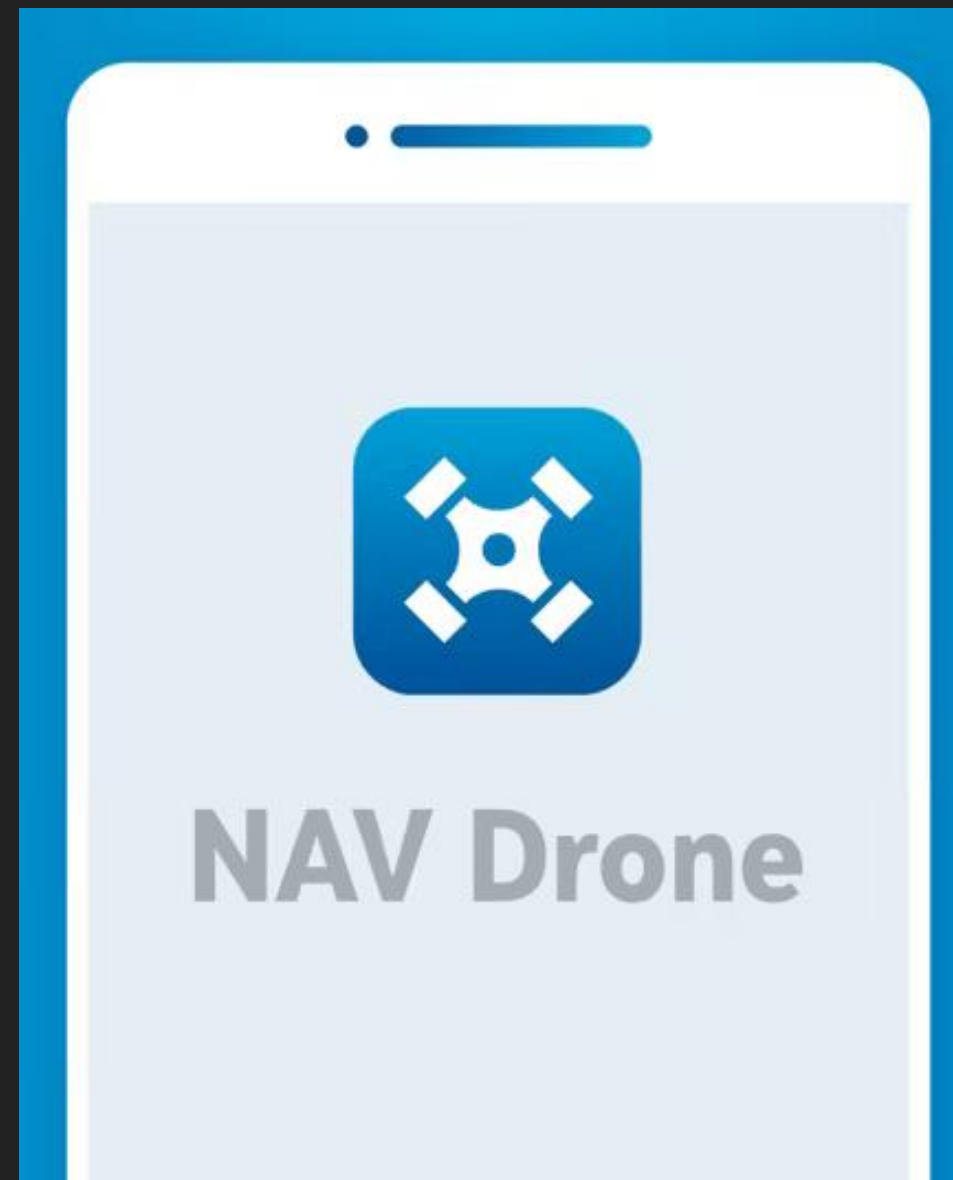
Advanced Operations

- In Controlled Airspace
- Near Airports
- Near Heliports
- >16.5' from Bystanders
- Over People (with Approval)
- SFOC Applications



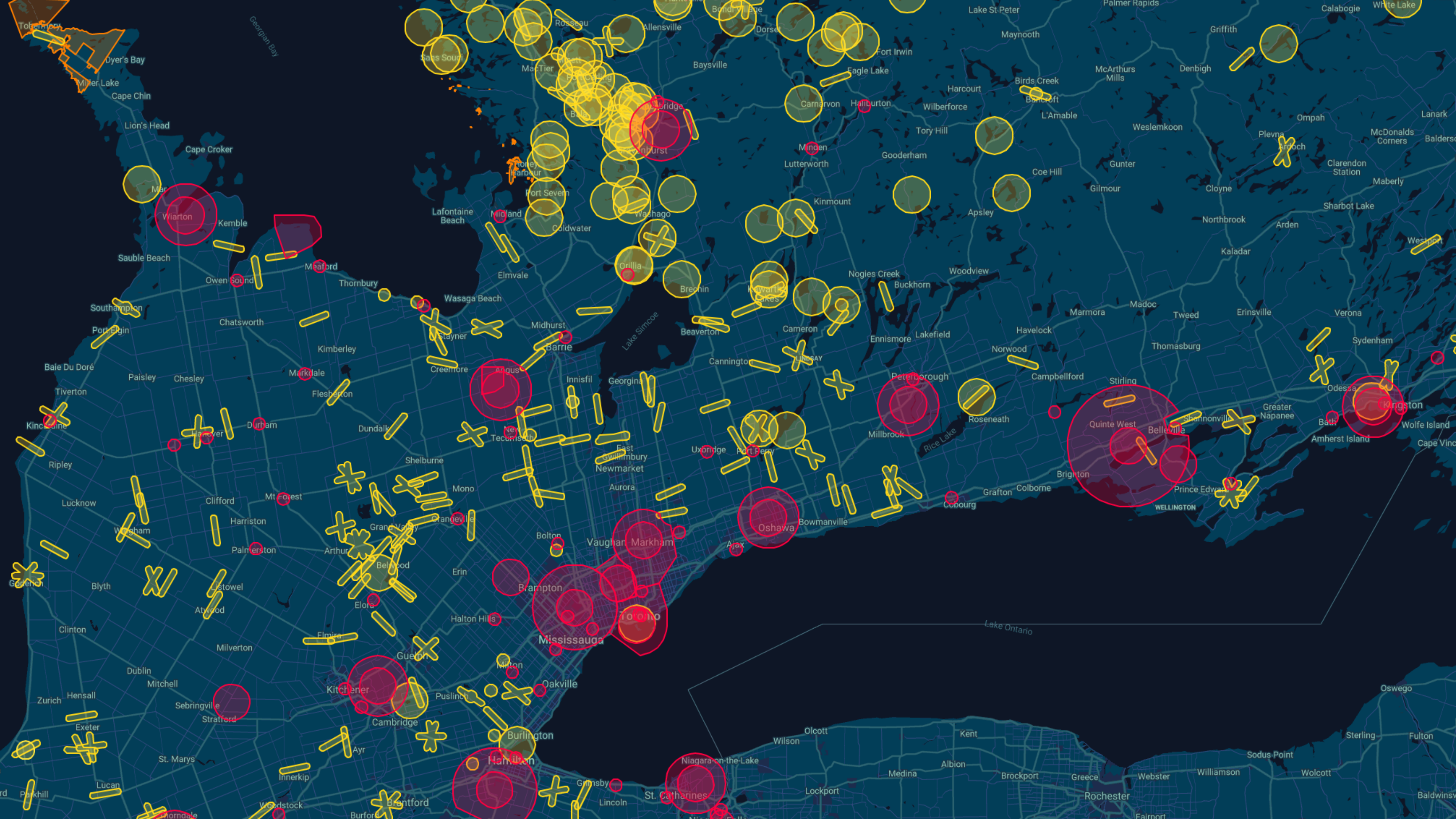
Obtaining Authorization To Fly

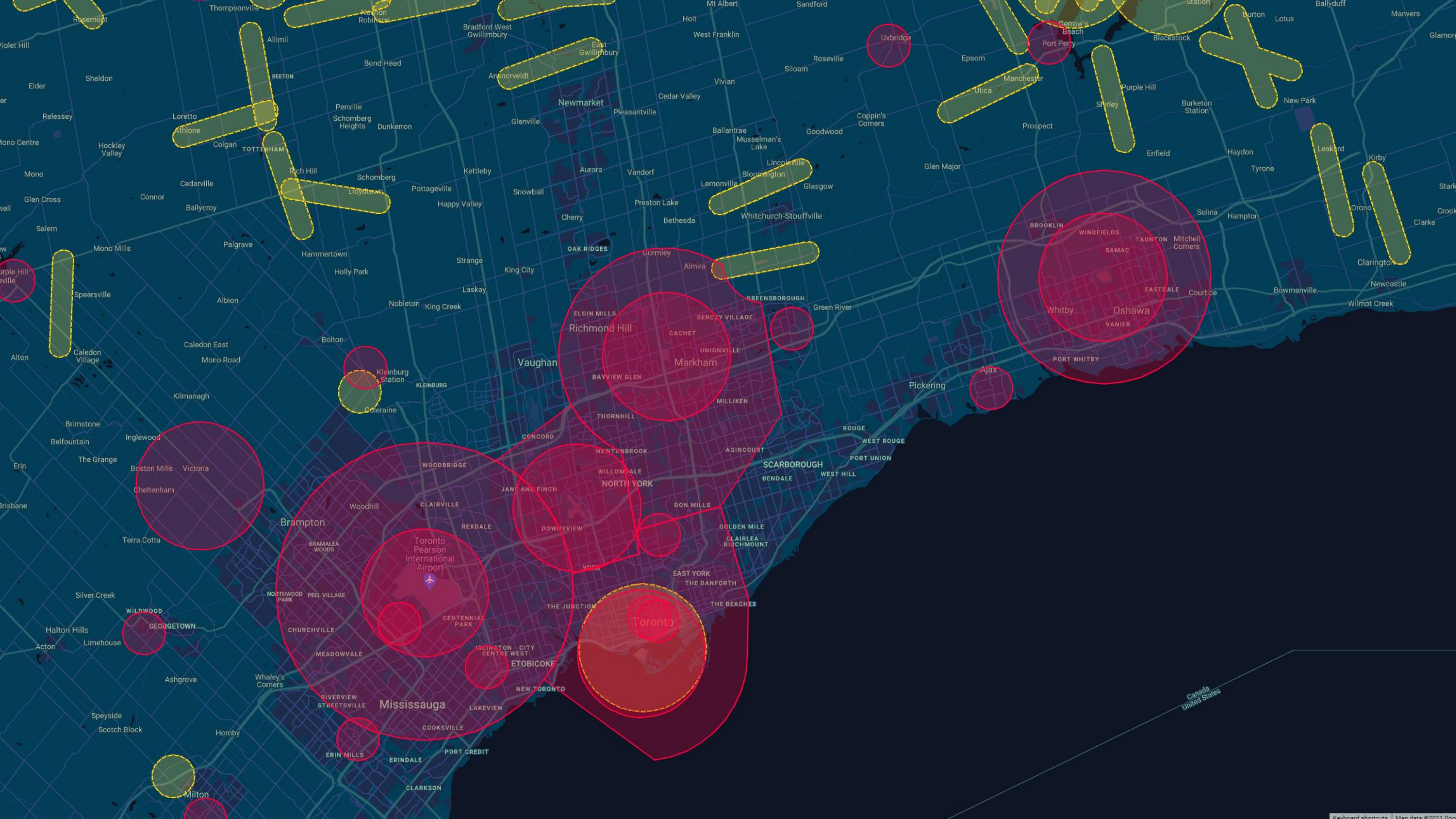
CONTROLLED AIRSPACE OPERATIONS ARE MANAGED BY NAV CANADA

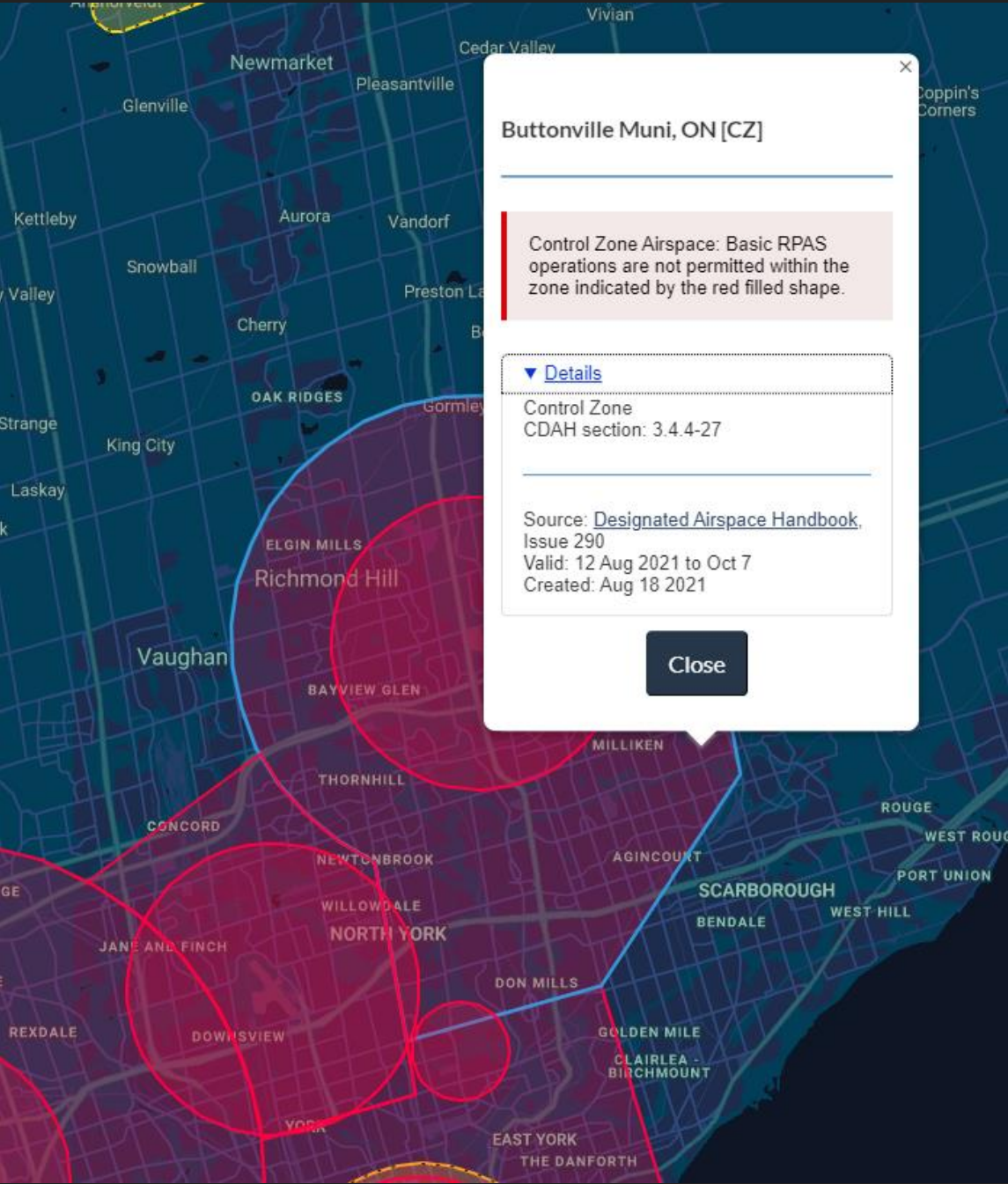
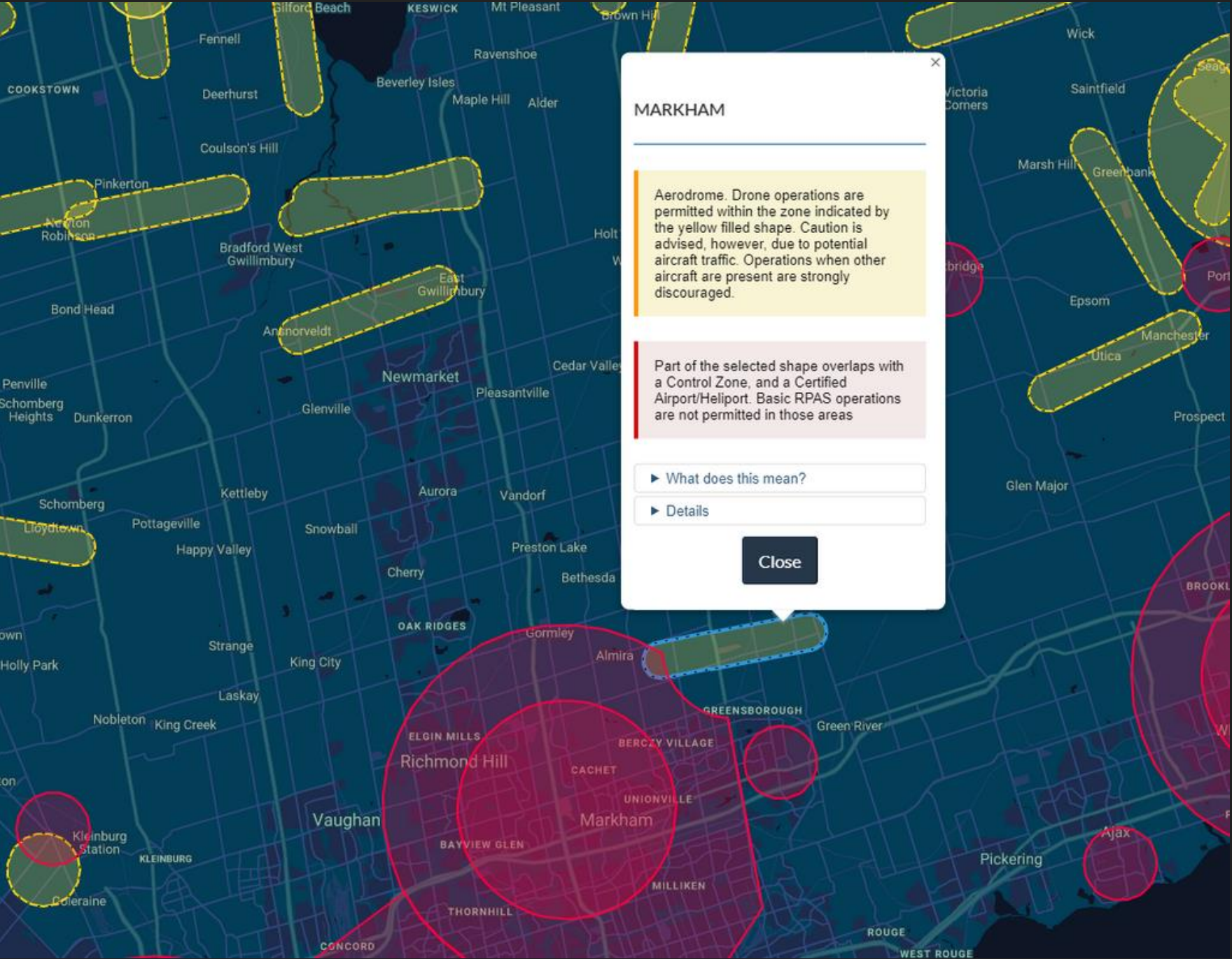


NAV Canada - Nav Drone

- RPAS Traffic Management
- Authorization
- Web Management Platform
- Mobile App (iOS/Android)







Who Enforces?

The Air

Transport Canada, NAV Canada, RCMP, LEOs

Privacy

Privacy Commissioner of Canada (PIPEDA)

Alberta OIPC

BC OIPC

Quebec CAI

The Ground

Provincial & Municipal Bylaw Enforcement

Federal Parks

Provincial & Regional Parks

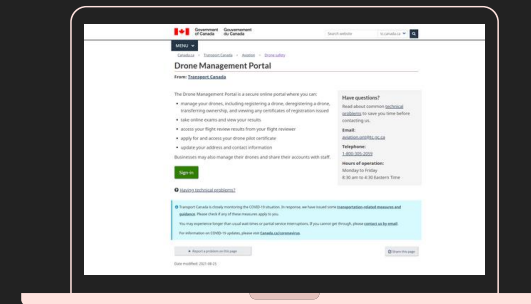
Municipal Properties

Getting Licensed - Basic Certificate



01

STUDY AND PREPARE FOR
ONLINE EXAM W/ COASTAL



02

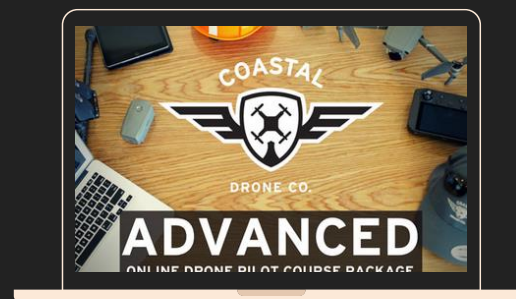
WRITE & PASS TRANSPORT
CANADA BASIC EXAM (60%)



03

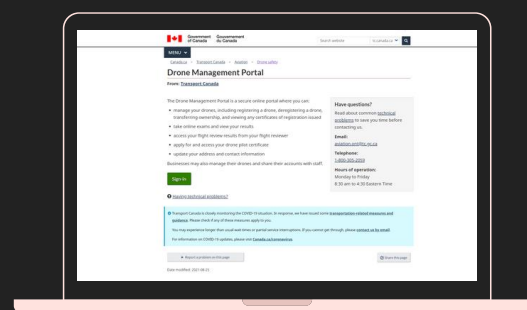
FOLLOW SOPS & FLY WITHIN
RESTRICTIONS

Getting Licensed - Advanced Certificate



01

STUDY AND PREPARE FOR ONLINE
EXAM W/COASTAL



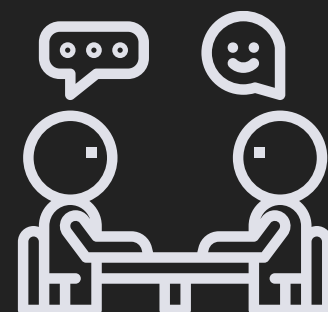
02

WRITE & PASS TRANSPORT CANADA
ADV EXAM (80%)



03

FOLLOW SOPS, FLY BASIC & PREPARE
FOR FLIGHT REVIEW

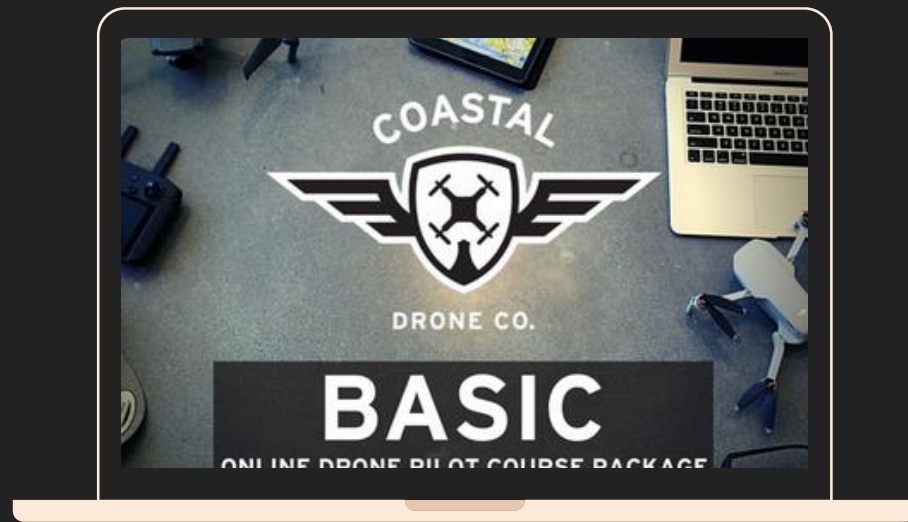


04

CONDUCT FLIGHT REVIEW

Coastal Drone Co Online Training

BASIC & ADVANCED CERTIFICATION COURSE BUNDLES



Basic Online Bundle

- 3 Hours Online Groundschool
- Sample Test Questions
- SOP Guide

*Bulk Training Discounts
Available*



Advanced Pilot Bundle

- 20 Hours Online Groundschool
- Sample Test Questions
- SOP Guide
- Flight Review Prep Course
- In-Person Flight Review

Choosing the right Drone

Weight & Performance

- Regulations
- Range
- Endurance
- Wind Resistance
- Accuracy

Safety Assurance Declaration

- Controlled Airspace
- Near People
- Over People

Sensor Capabilities

- Size
- Resolution
- Spectrum (RGB, IR, Radiometric)
- Field of View (Tele, Wide)

Micro Category: DJI Mini SE, 2, 3 Pro* Autel Nano

\$499-1500 CAD

249g
4K 60FPS RGB
48MP Camera
37 min Flight Time



Small Prosumer Category: Skydio 2, DJI Air, Mavic 1/2/3 Pro, Phantom, Autel Evo

\$1500-6000 CAD

750-900g
4K 60FPS RGB HDR
12-20MP Camera
30-46 min Flight
Time





Compact Industrial: Mavic 2 Enterprise, Matrice M30

\$8000 CAD

640x512 Radiometric
Thermal
48MP RGB
~2C Sensitivity

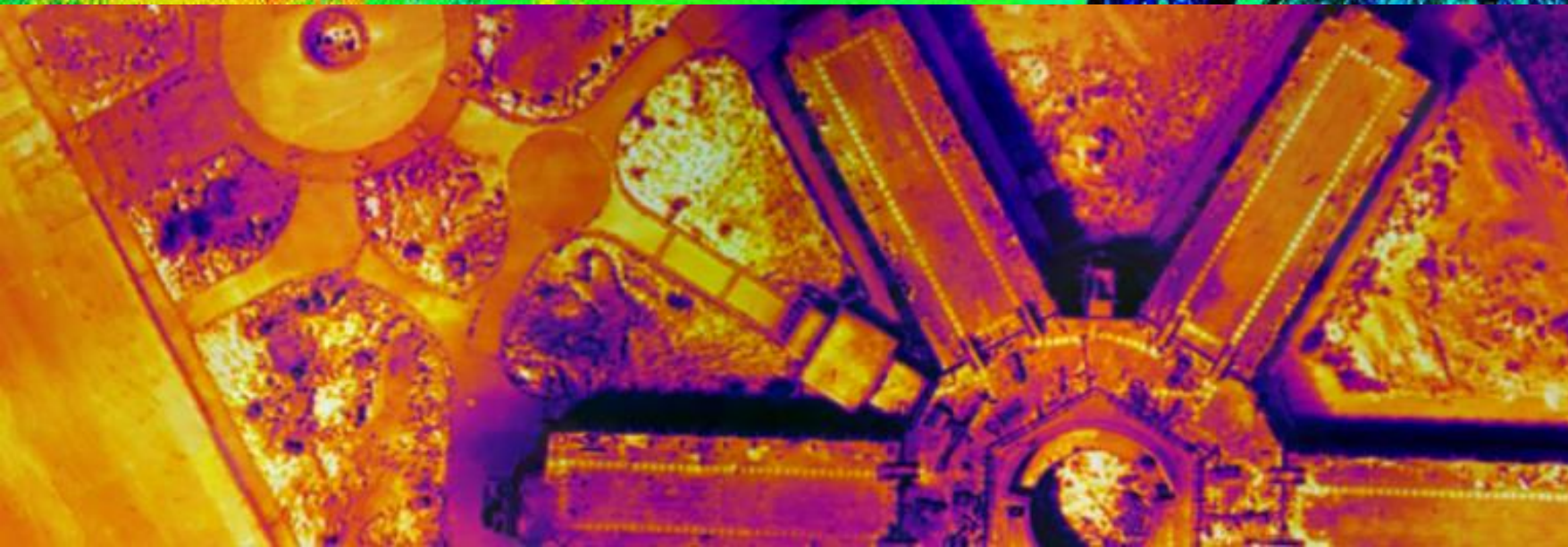
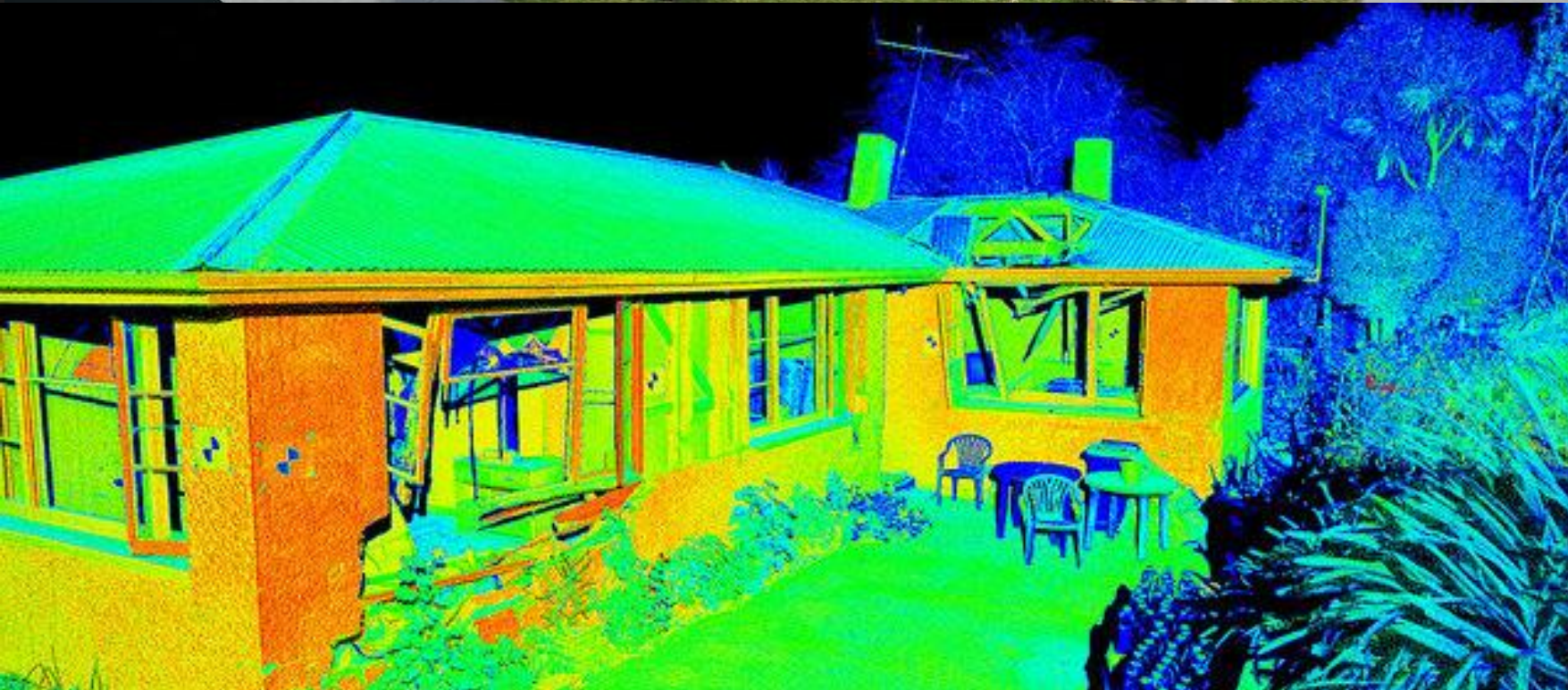


Enterprise Multirole: DJI Matrice 30, 300, 600, FreeFly AltaX,

\$ Yes.

Fixed or Replaceable
Payloads
25kg+ max weight
Open Source API

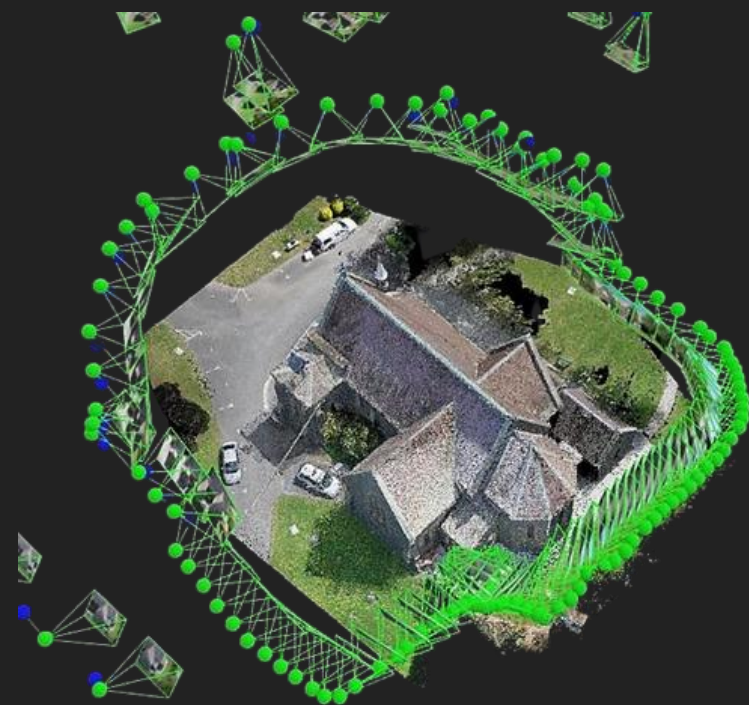
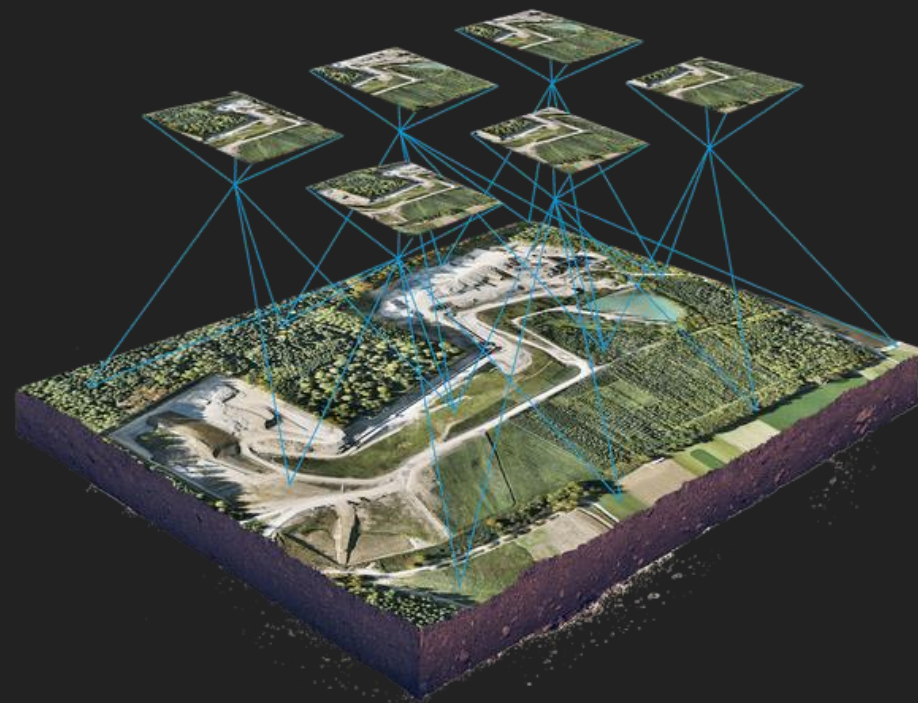




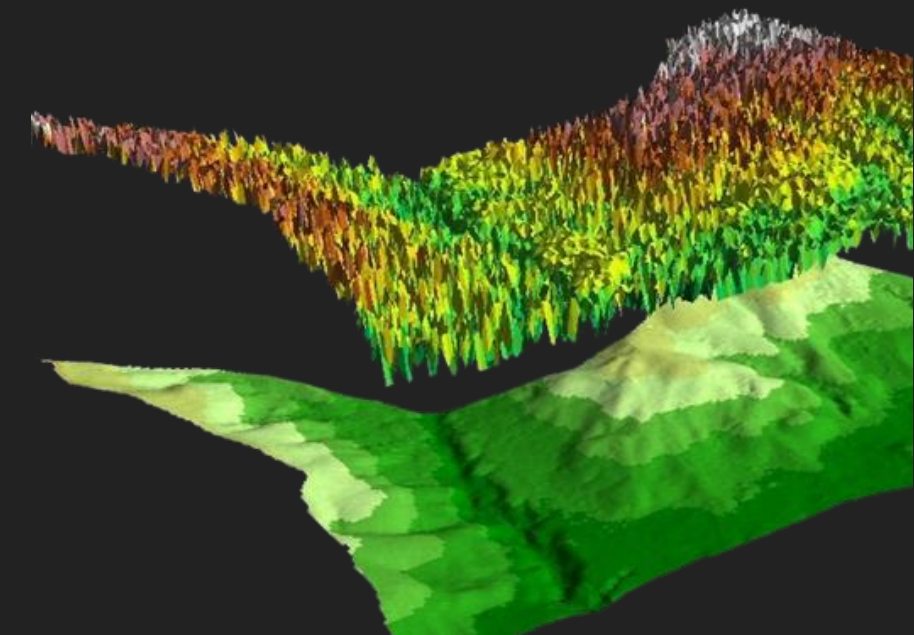
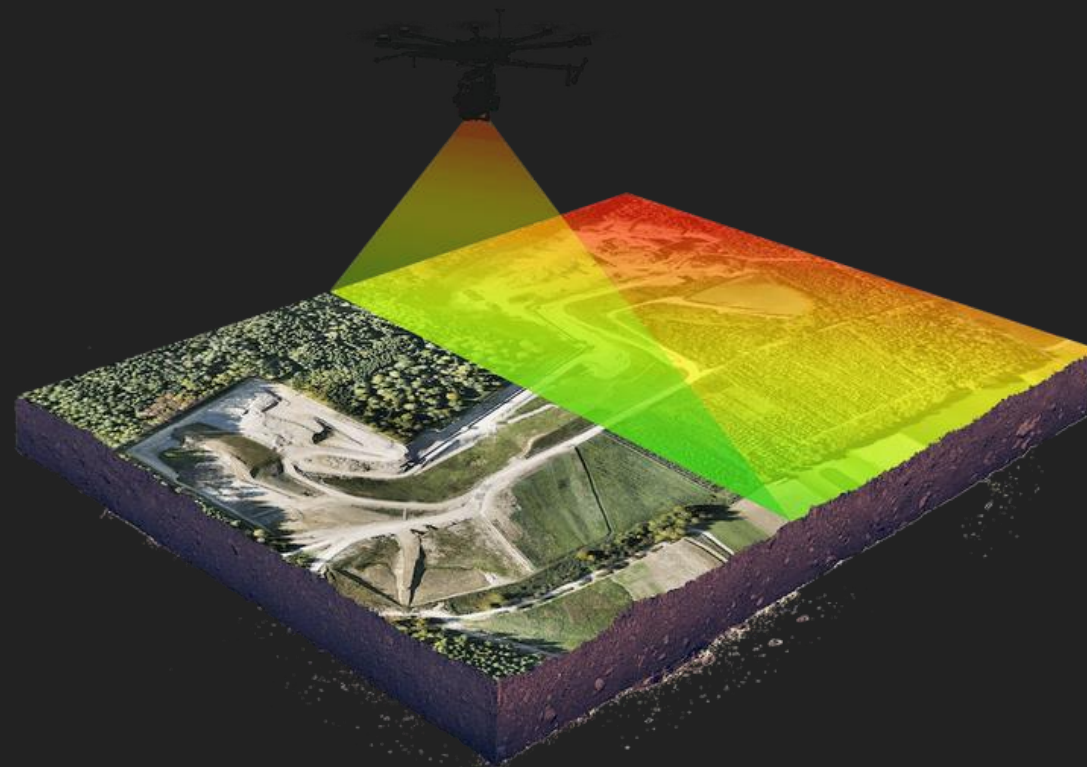
APPLICATIONS

TYPICAL USE CASES FOR QUADCOPTERS

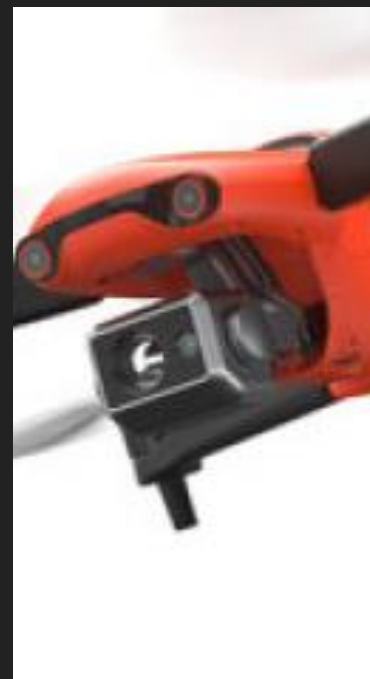
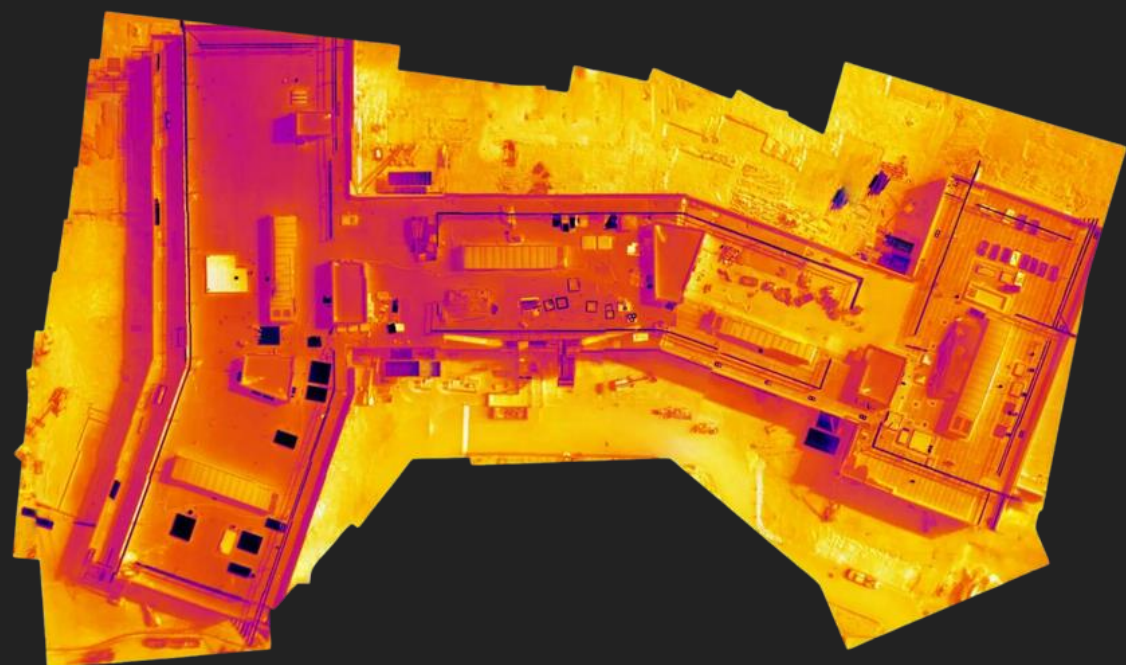
Photogrammetry



LiDAR (Light Detection and Ranging)



Thermal Imaging



Startup Checklist

Adding a drone to your inspection business, summarized.

☐

BUSINESS CASE ANALYSIS

☐

PREPARE FOR & WRITE THE EXAM

☐

PURCHASE DRONE & REGISTER IT

☐

OBTAIN CERTIFICATE (BASIC, ADVANCED)

☐

FOLLOW SOPS & FLY SAFE

Questions?

Feel free to reach out!



Ian Wills

[linkedin.com/in/iangwills/](https://www.linkedin.com/in/iangwills/)
ian@coastaldrone.co

Web - coastaldrone.co
Social @coastaldroneco