BC Geophysical Society

Drones and the Airspace: Current Operations and Future Needs

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NAV CANADA

AGENDA

- Who is NAV CANADA
- The Introduction of Drones
- NAV CANADA Strategy
- Risk of Incursions
- NAV Drone
- BVLOS

FACTS AND FIGURES

Private, non-share capital company | **Managing one of the largest regions of airspace in the world**

Fiscal 2021

ACC Traffic:

2.1 million flights

Total IFR Flight Hours: 2.0 million

Tower, FSS and RAAS Traffic:

4.5 million movements

18 M

square kilometres of airspace managed by NAV CANADA

More than

100

staffed sites

More than

4,000

employees across the country

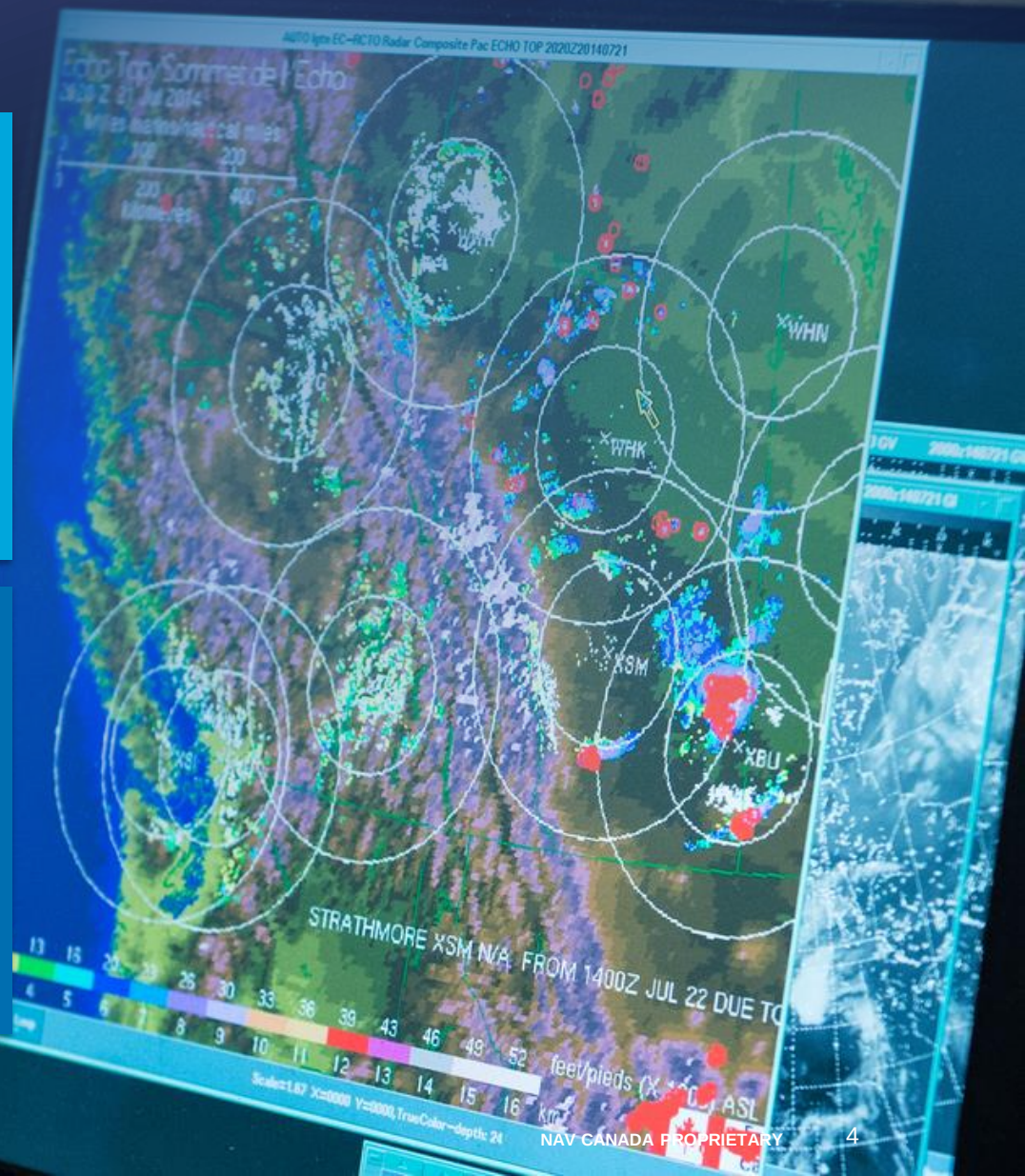
45,000+

customer accounts

The facts and figures presented here were accurate as of 2020.

OUR SERVICES

- Air traffic control
- Flight information
- Weather briefings
- Aeronautical information
- Airport advisory services
- Navigation aids

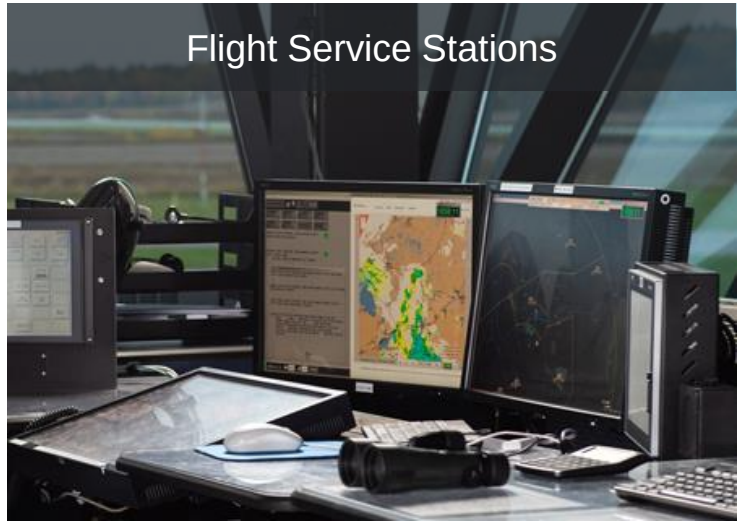


OUR FACILITIES

Area Control Centres

Air Traffic Control Towers

Flight Service Stations

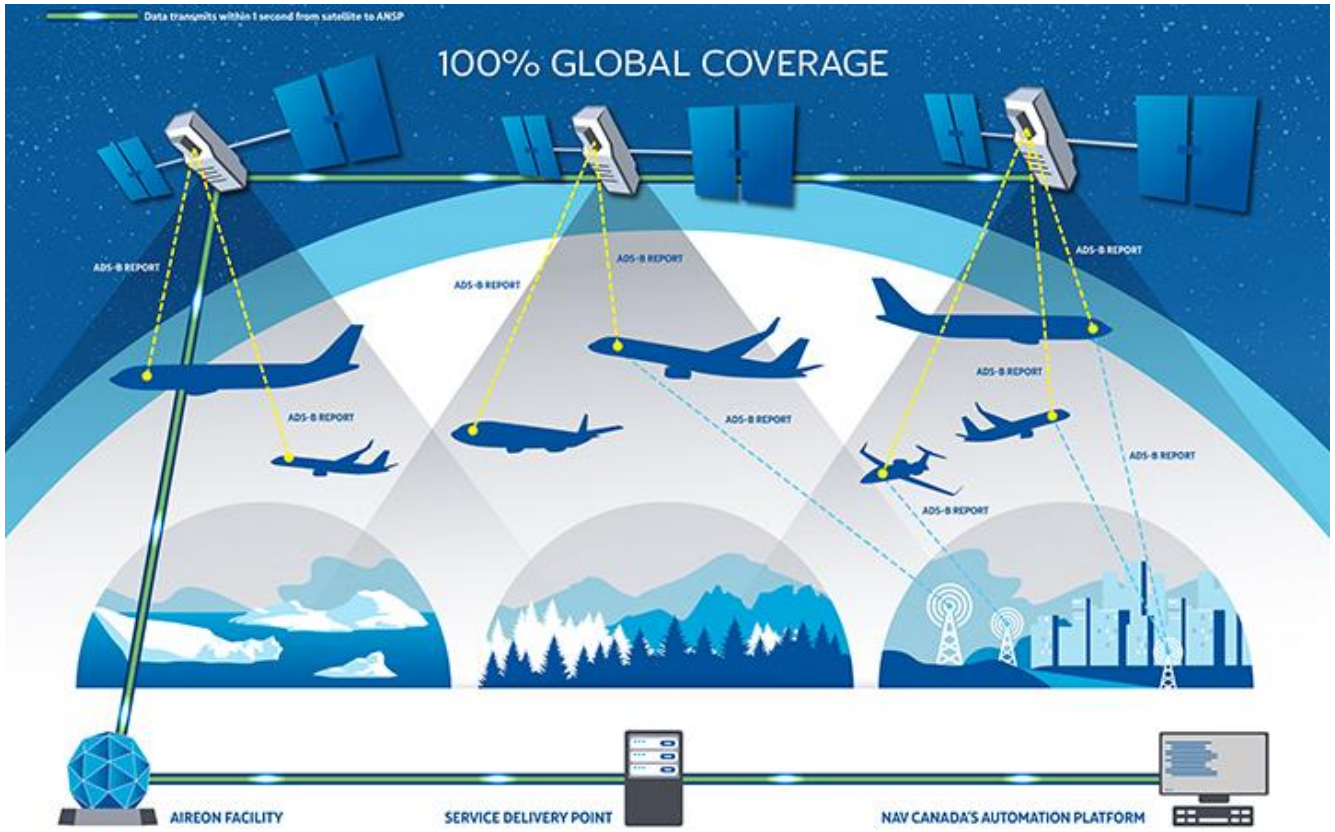


Flight Information Centres

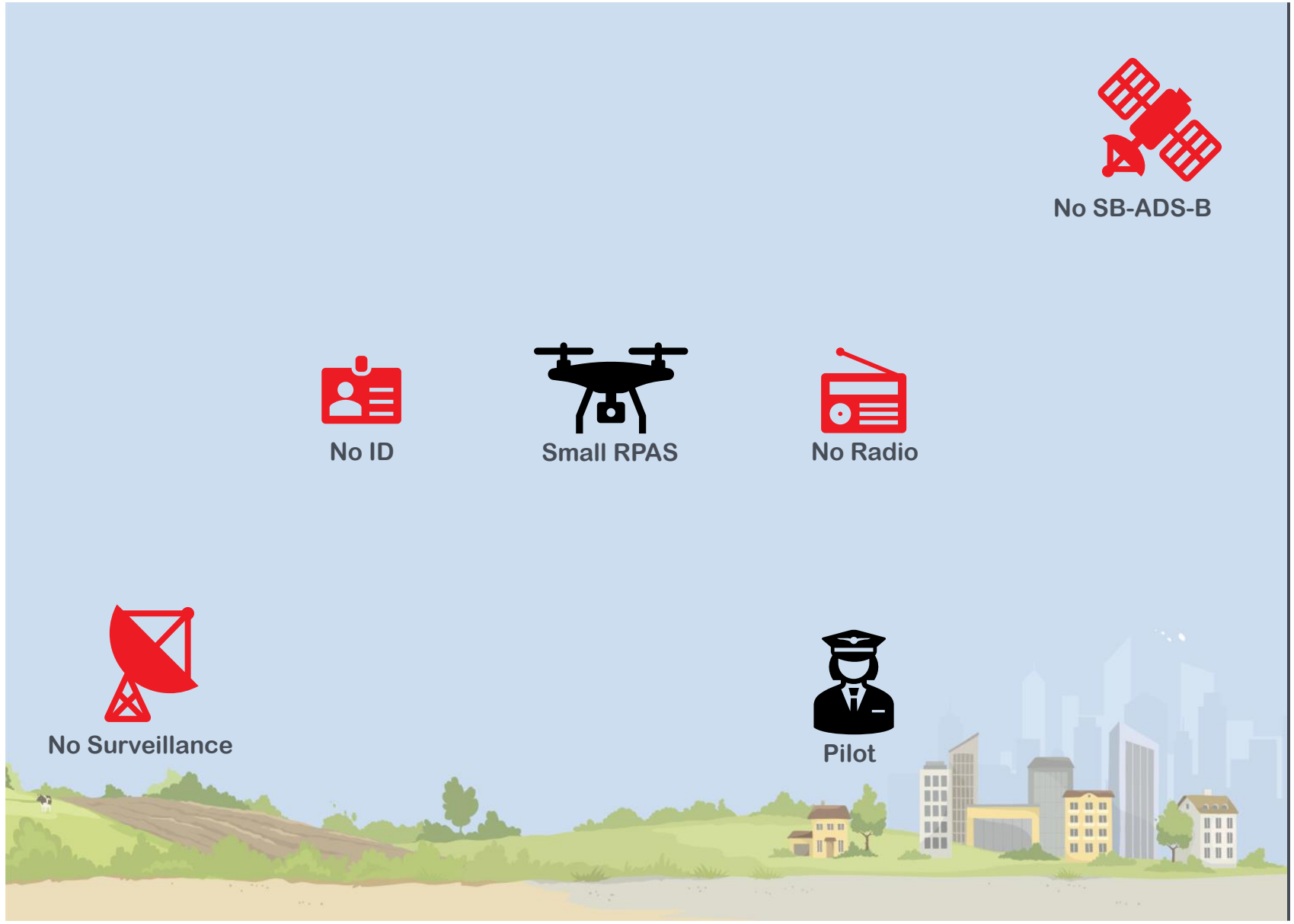
Maintenance Centres

Community Aerodrome Radio Stations

SURVEILLANCE



SMALL RPAS - CHALLENGES TO ATS



No ID

Unable to confirm identity of RPA and identity and location of RPA Pilot's ground station.

No Surveillance

Existing ATM surveillance is designed for large aircraft and is unable to detect RPA.

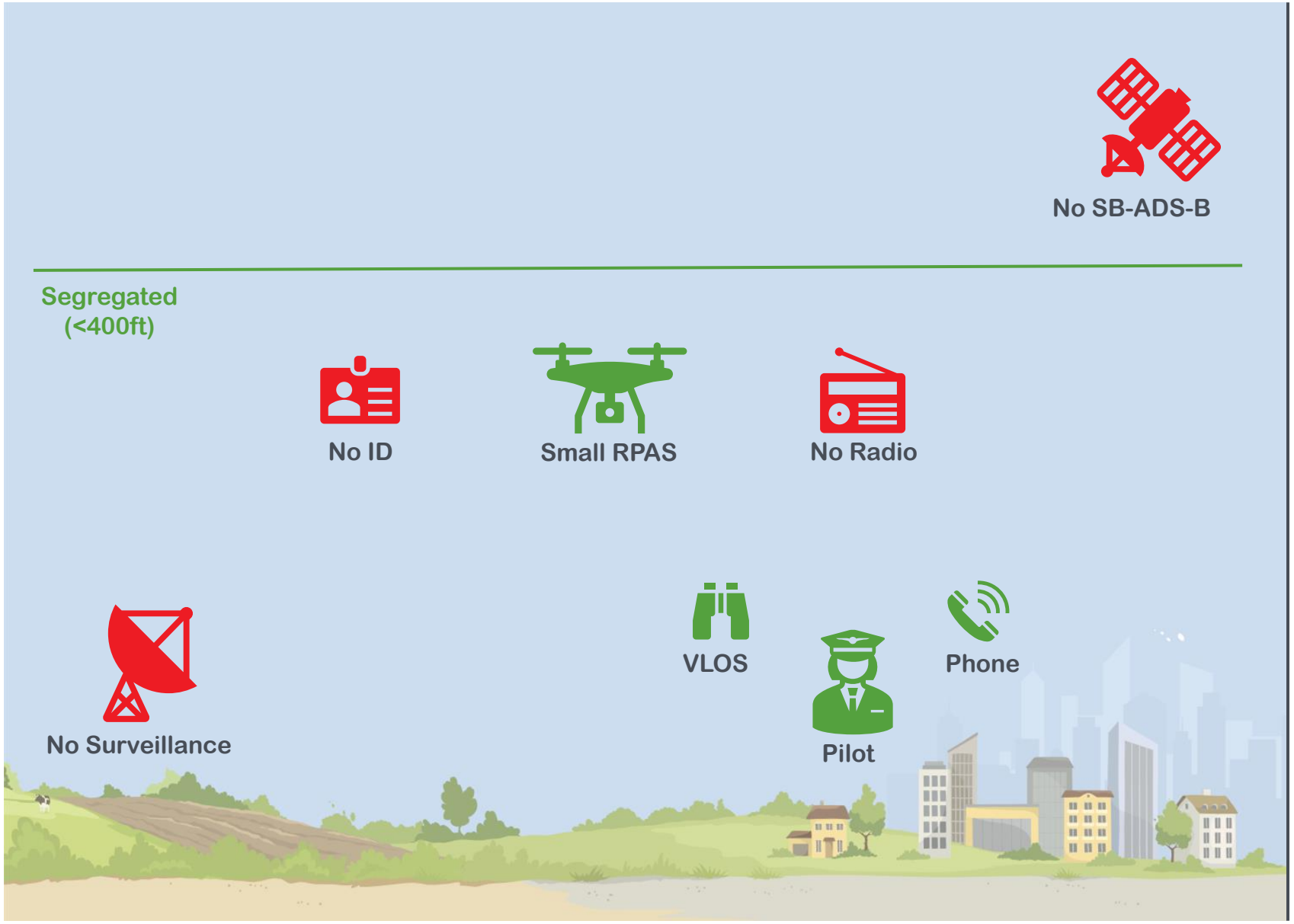
No Radio

RPAS Operator's do not use traditional aviation communication (radio).

Scale

Rapid growth expected to continue with Commercial Market expected to triple by 2023.

SMALL RPAS CHALLENGES TO ATS / REGULATIONS



Regulations
CAR Part IX
2019

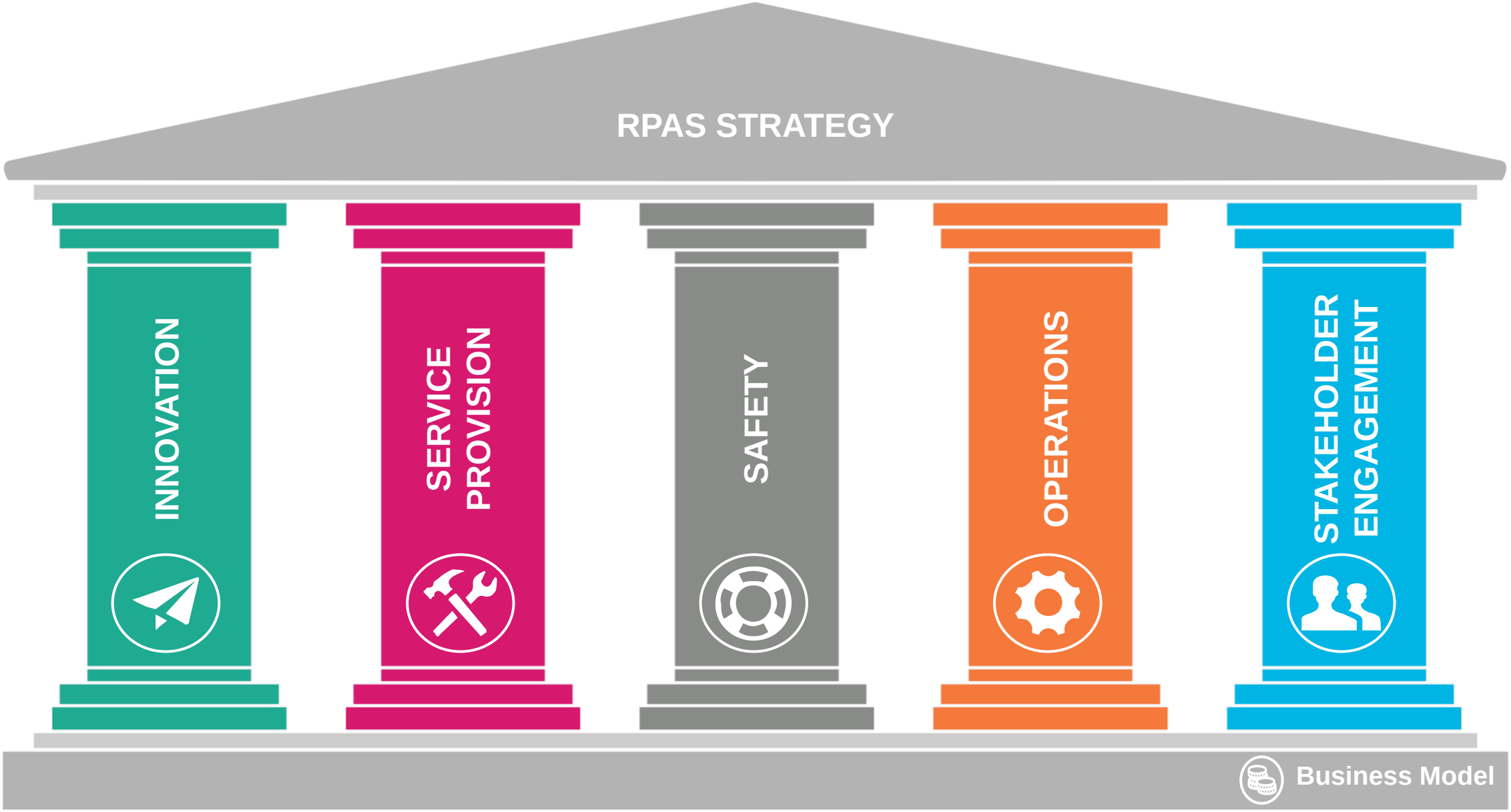
The
Product

The
Pilot

The
Procedures

RTM STRATEGIC FRAMEWORK

NAV CANADA



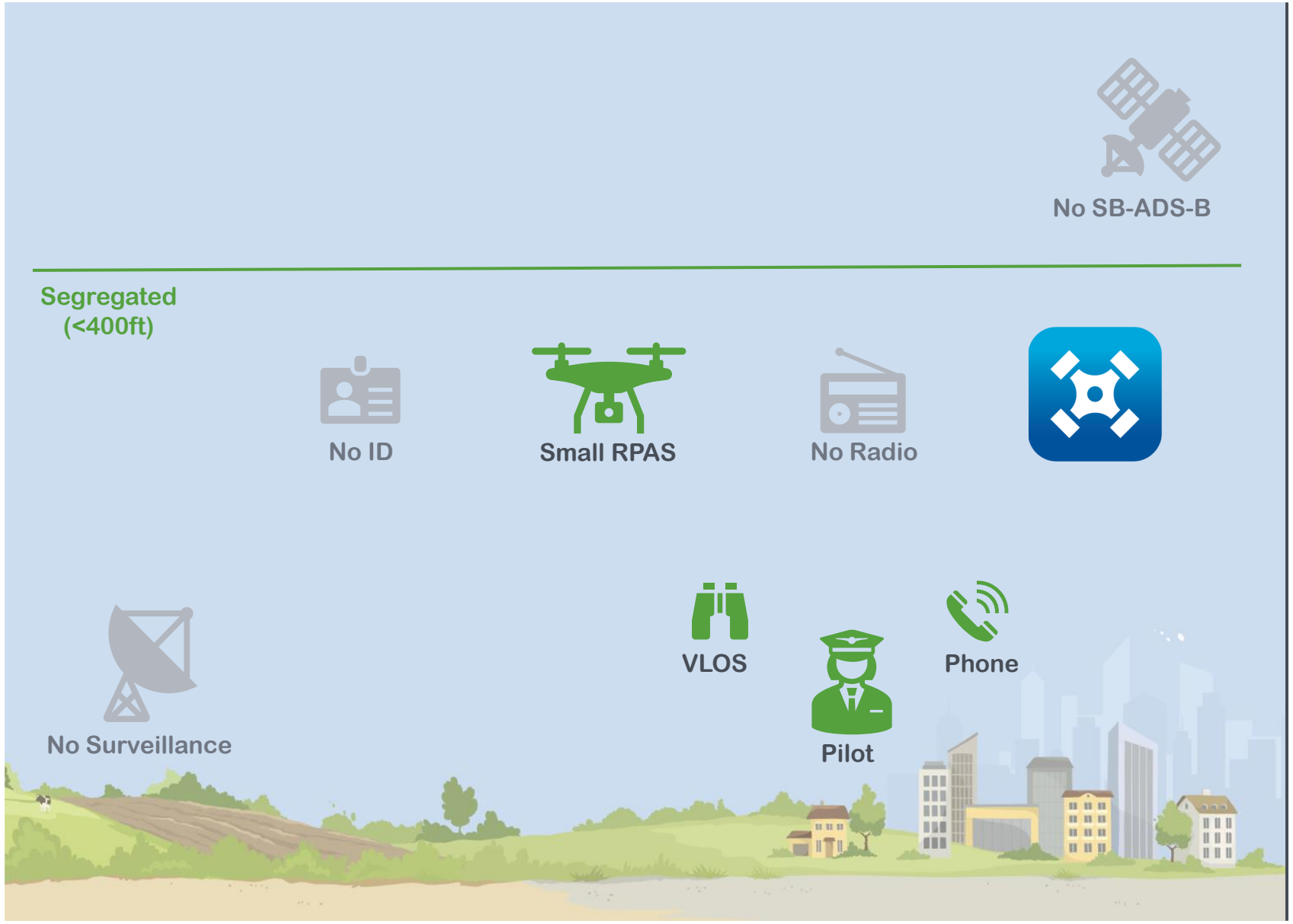
AIRSPACE INCURSION THREAT

- AORs (Typically Pilot Reports)
- Drone Detection Systems
  - Various Airports
  - Trials and Data
  - Sample data shows a significant gap in approvals
- Industry Guidance Issued
- Drone Incursion Response Protocol (DIRP)

AOR – RPAS Related - Volume

FY19	FY20	FY21
214	107	134

SMALL RPAS – NAV DRONE



NAV CANADA NAV Drone

Safety

- Education
- Flight Planning
- Awareness
- Manage Workload
- Controlled Airspace

How?

- Regulations
- Airspace Info.
- Automation
- ATS Users

SERVICE PROVISION

NAV DRONE

RPAS OPERATOR

AIRSPACE INFORMATION

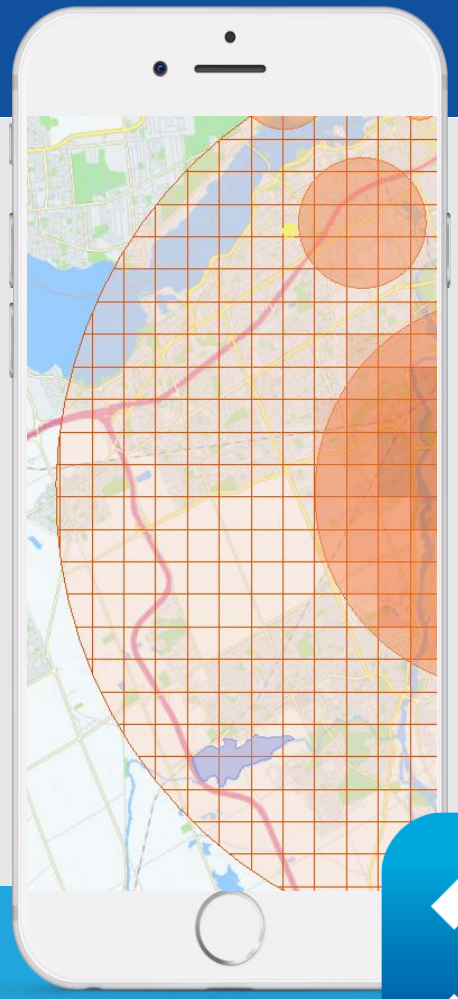
Provides operators with airspace information including classification, restrictions & NOTAMs

FLIGHT PLANNING

Provides capabilities to schedule and plan flights in controlled airspace

FLIGHT AUTHORIZATION

Automates authorization responses to fly in controlled airspace



NAV CANADA

WORKLOAD AUTOMATION

Automates majority of authorization requests based on preapproved flight areas.

OPERATIONAL INSIGHT

Provides a visual of scheduled drone flights occurring in controlled airspace

EMERGENCY MANAGEMENT

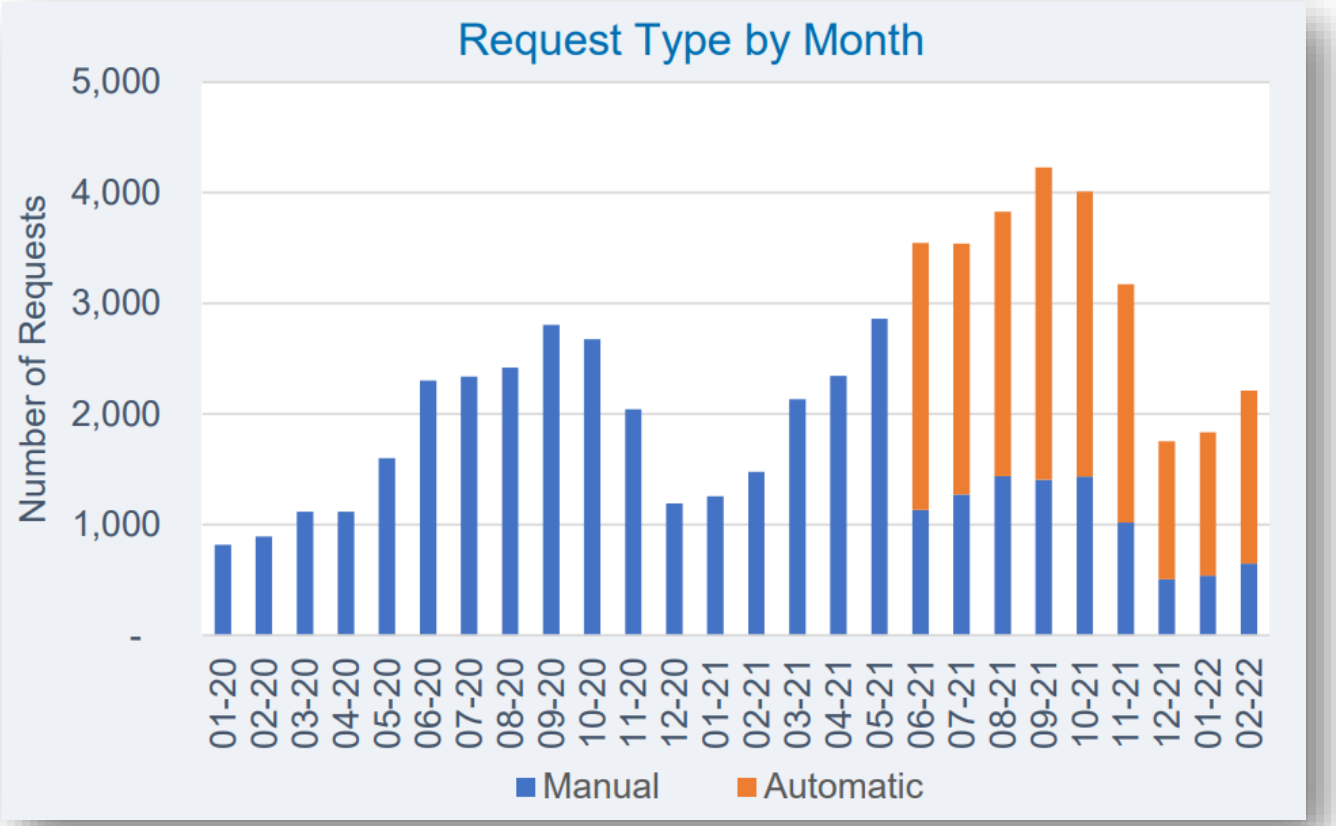
Provides capabilities to quickly notify emergency operators

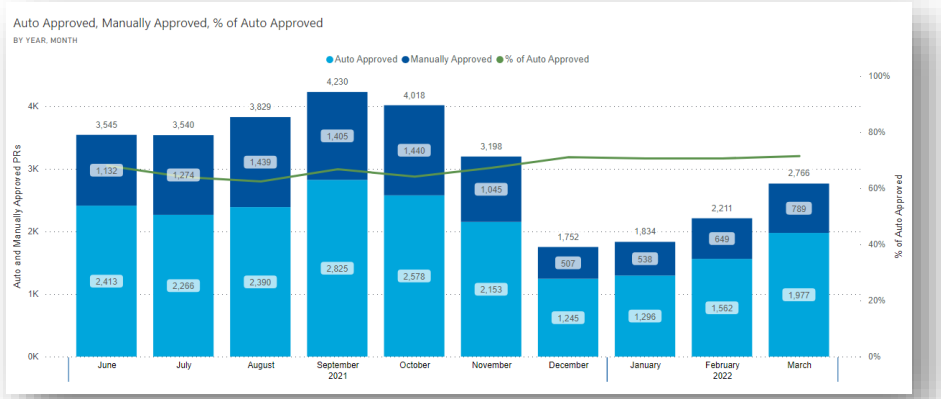
OPERATION MANAGEMENT / SAFETY AWARENESS

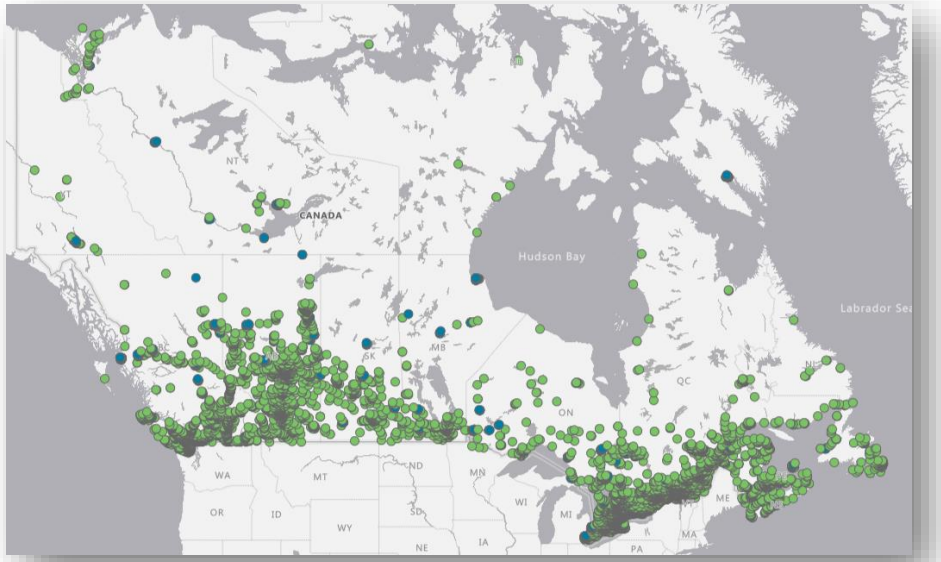
AWARENESS / EMERGENCY CONTACT

SERVICE PROVISION

NAV DRONE







- Over 17K external users, 3,300 Advanced Certified Pilots
- Growth of permission requests: 59% (annual)
- NAV Drone: 30K requests since go live
  - Immediate Approvals based on Grid 67%

RESEARCH AND TRIALS

- Research, Education, Influence
  - ICAO, Standards Bodies, International ANSPs
- RPAS Traffic Management (RTM) Advisory Committee (RTMAC)
  - Remote Identification Working Group (new)
  - Trials
    - Phase 1 Rural – Underway
    - Phase 2 Urban – Call for proposals later this year
    - Phase 3 Airport (Controlled Airspace)
- Additional Focus Areas
  - Extending NAV Drone awareness to additional stakeholders
  - Large RPAS safe integration (IFR Equipped)
  - Drone Detection Technologies

Questions?

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