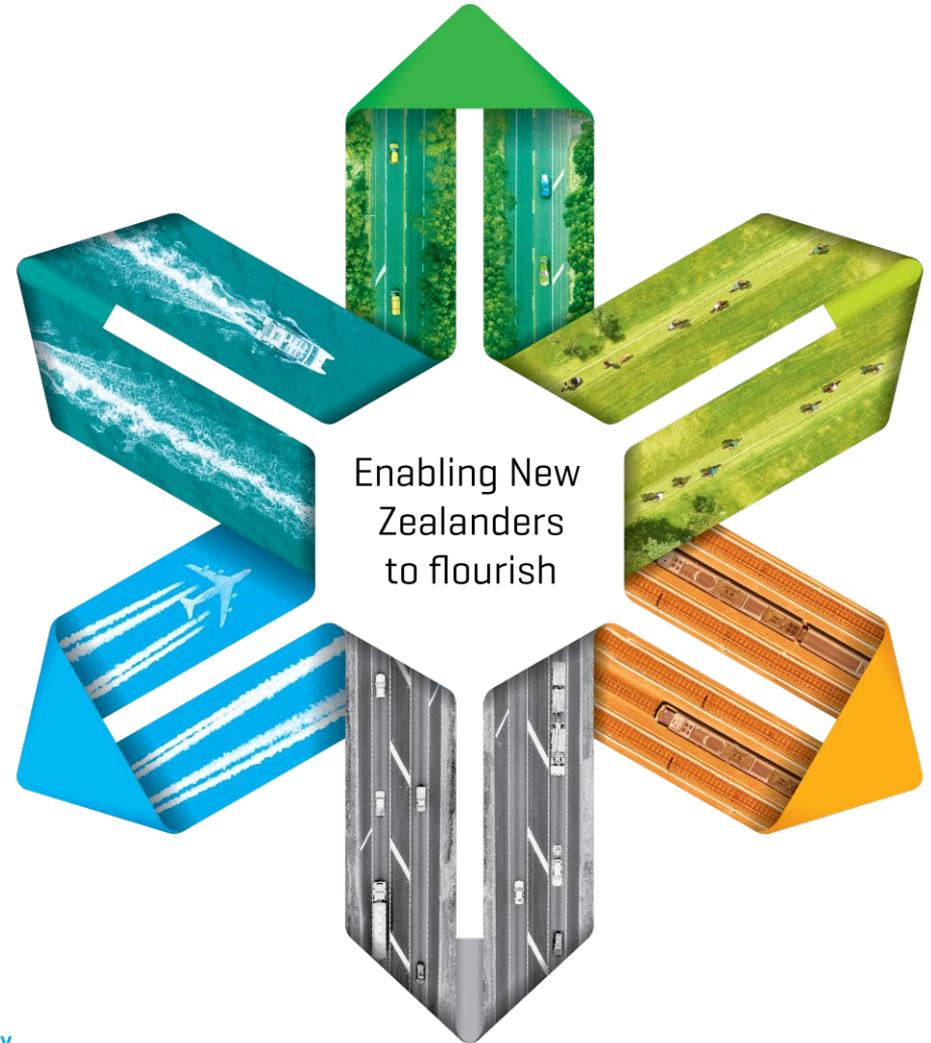


# Enabling Drone Integration

## Public consultation

April 6 – May 21 2021



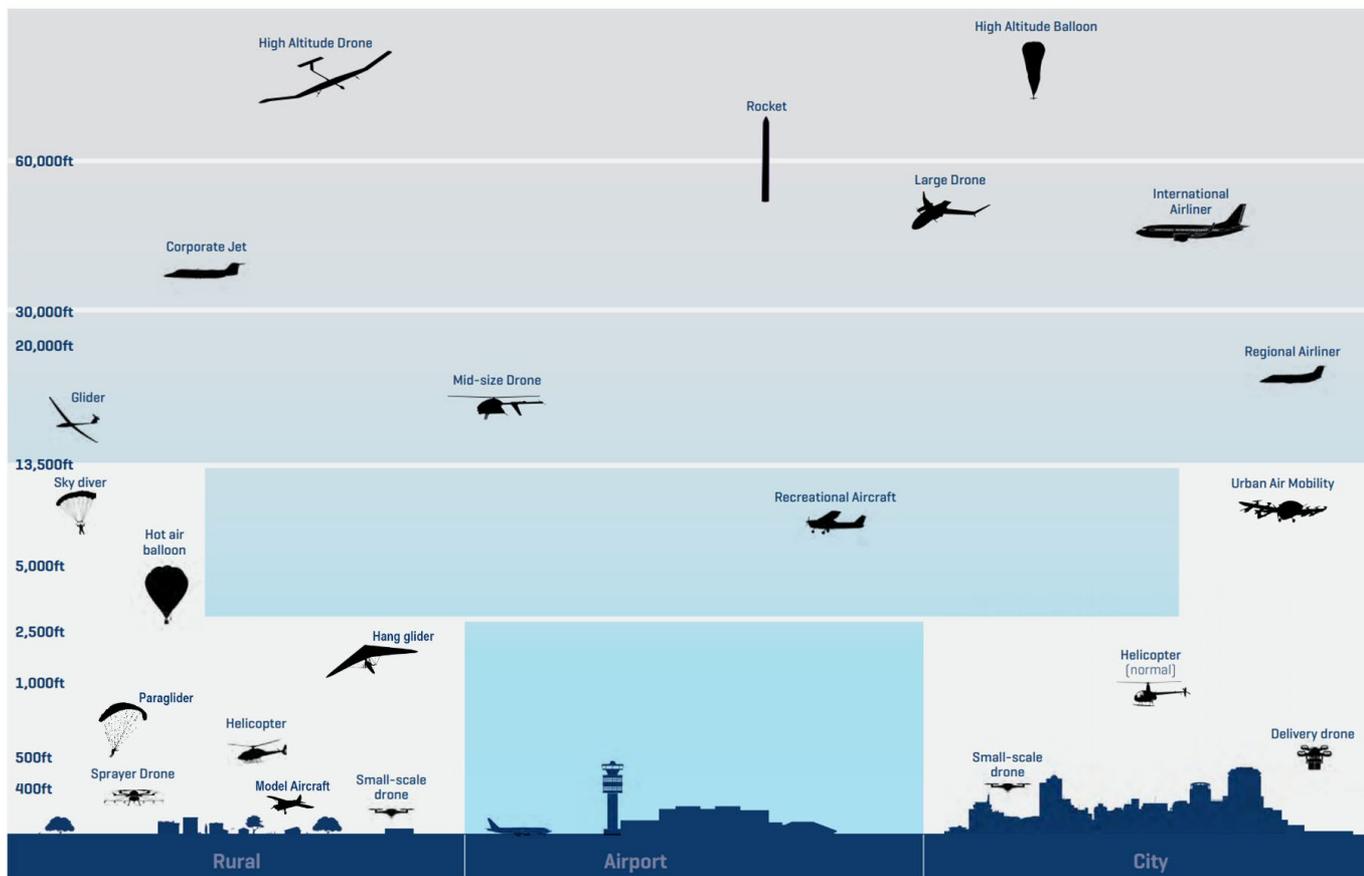
# What is a 'drone'?



- ▶ We have used the term 'drone' to describe Unmanned Aircraft (UA) flown under Part 101 and 102 of the New Zealand Civil Aviation Rules (the Rules).
- ▶ Under the Rules, a UA is an **aircraft** '**designed to operate with no pilot on board**'. This includes unmanned aerial vehicle (UAV) (also known as remotely piloted aircraft (RPAS)), unmanned aerial system (UAS), and model aircraft.
- ▶ Aligned with ICAO definition of "unmanned aircraft".



# New Zealand drone ecosystem



# Current drone regulatory framework



- ▶ Introduction of a risk-based system with new Civil Aviation Rules in 2015 as an **interim step** to manage safety risks:

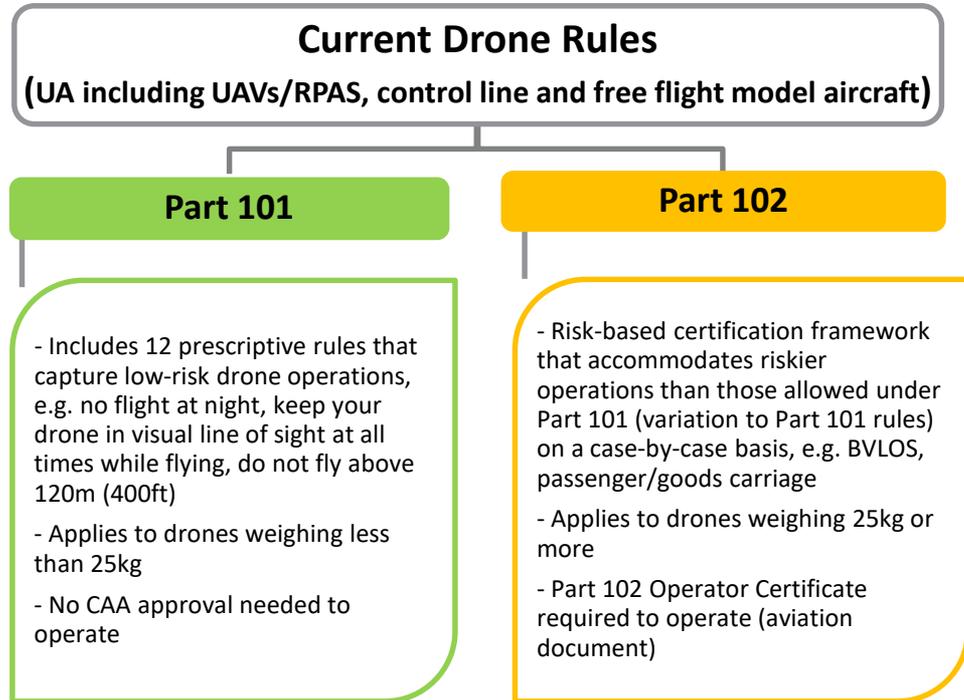
- ▶ **Part 101 (prescriptive)**

- ▶ **Part 102 (risk-based)**

- ▶ No distinction made between commercial and recreational operations

- ▶ Focus on the safety risk of an operation rather than its purpose

- ▶ 'Semi open' system



# Call for a change



- ▶ Since 2015, a range of events have prompted MoT and CAA to review the current regulatory framework:
  - ▶ Significant uptake of drone use in New Zealand and internationally
  - ▶ Rapid development of drone technology
  - ▶ Increasing numbers of companies interested in testing, trialling and developing innovative technologies in New Zealand
  - ▶ Significant increase of complaints lodged to the CAA and Police about drone use and reported incidents of drone use near airports and aircraft
  - ▶ Strong international push towards drone integration

# Taking Flight: Government long term vision



- ▶ In 2019, Government released the cross agency paper '*Taking Flight*' which sets the vision **to integrate drones into the aviation system and wider transport sector.**
  - ▶ Our vision is to **enable a thriving, innovative, and safe drone sector.**
  - ▶ Four building blocks: regulation, infrastructure, funding, R&D
- ▶ In an integrated system, both manned and unmanned aircraft can operate safely and seamlessly in the same airspace, and with other transport modes.



# Estimated benefits to the national economy



- ▶ The estimated value of benefits to the national economy from commercial drone use could be as high as **\$7.9 billion over 25 years** (pre-COVID 19).
  - ▶ A number of key industries would benefit from the greater use of drones, e.g. agriculture/farming, civil construction, rescue operations, delivery and transport services.
- ▶ In a COVID world, drones have provided the aviation sector with a significant opportunity to embrace new and emerging technologies.



# Cross-government common goal



We are working closely with MBIE, CAA and Airways to enable drone integration. A number of initiatives are underway to achieve the vision:

- ▶ New approaches to air traffic management and navigation will be required
  - ▶ Unmanned Aircraft Traffic Management (UTM)
- ▶ MBIE Airspace Integration Trials Programme (AITP) that aims to support R&D in New Zealand through a portfolio of drone applications.
- ▶ CAA education and safety promotion
  - ▶ CAA campaigns to influence drone user behaviour and to improve compliance with rules and safety.
- ▶ Civil Aviation Bill (MOT)
  - ▶ Aims to modernise aviation legislation. Includes a range of minor amendments relating to drones.

# What are our objectives for this work?

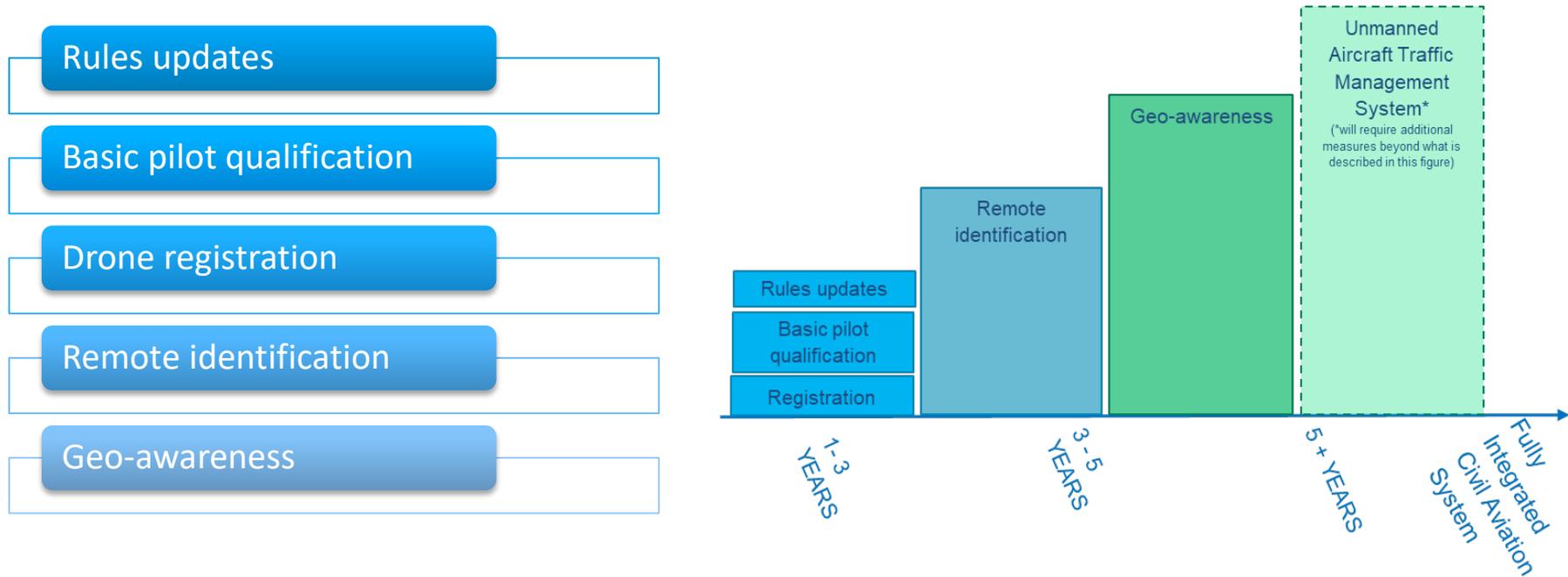


- ▶ **Enabling innovation and development in the drone sector**
- ▶ **Maintaining appropriate standards of aviation safety and security**
- ▶ **Laying the early groundwork for future integration of drones**
- ▶ **Fostering public acceptance**

# Proposed series of regulatory measures



- ▶ To achieve the objectives, we propose to introduce a series of **complementary and future proof** regulatory measures that **build on each other**.



# What problems are we seeking to address?



- ▶ This series of measures would help address the growing number of issues related to **aviation safety and security**, and **privacy**.



**Lack of compliance:** while Rules have been in place since 2015, still too many people get it wrong.



**Ineffective enforcement:** we don't know 'who is flying what', which makes it hard to enforce rules when required.



**Suitability of the current regulatory framework:** some Rules are no longer working as intended and do not help achieve the best safety outcomes.



**System sustainability:** our current aviation system and infrastructure prevent us from getting the most out of drones.

# What does it translate into (for now):



- ▶ This means that we would like to:
  - ▶ Revisit the system design to enable drone integration
  - ▶ Start with a **set of common principles for all types of drones and users...**  
**... while acknowledging** the different types of drones and operations, and the existing manned aviation system
  - ▶ Adopt a **progressive** approach for integration

# Rules updates



- ▶ **We are proposing to update the Part 101 Rules applicable to drone operations with both major and minor updates.**
  - ▶ We **aim** to make the Rules clearer, fairer and future focused.
  - ▶ Changes would improve **compliance, enforcement, suitability of the regulation frameworks** and the **sustainability of the system**.
- ▶ Any changes to the Rules will follow the usual rule development process, including consultation on an NPRM and establishment of a safety case where required.
- ▶ **Minor Part 101 Rules updates** include:
  - ▶ *Clarification of Rules*: Table 5 in the discussion document outlines these, as well as relaxing the spotter/observer requirement for First Person View, and introducing ‘tethered drones’. This will also include the introduction of new definitions.

# Rules updates



## ▶ Major Part 101 Rules updates include:

- ▶ *A standalone Rule Part for drones*: this is envisioned to separate out drones from the current Rule Part 101, that currently covers all unmanned aircraft, e.g. parasails, rockets.
- ▶ *The removal or relaxation of the consent provision*: this requirement has proved to be impractical, ineffective, and inefficient. We are considering either removing it if the series of measures is adopted, or relaxing it by introducing another safety measure like safe distances.
- ▶ *The review of the minimum four kilometers flight distance from aerodromes*: we aim to relax this distance in some locations, taking into account the large variation in use of uncontrolled aerodromes across New Zealand.

# Basic pilot qualification



- ▶ **We are proposing to introduce mandatory basic qualification for all Part 101 pilots.**
  - ▶ This qualification would **aim** to improve **compliance** through better knowledge and awareness of the rules.
  - ▶ If this is implemented, it will mean that anyone operating a drone under Part 101 will have to either:
    - pass a theory test and obtain a basic pilot qualification; or
    - be supervised by someone who holds a basic pilot qualification and is at least 16 years old; or
    - be trained and tested through Part 141 or 101.202 approved training organisations.

# Basic pilot qualification



- ▶ This basic pilot qualification would **not constitute an aviation document** or replace the pilot qualification as currently referenced in the Rules (i.e. Part 101.205 Aerodromes).
- ▶ We are considering **granting special authorisation** to pilots who have already gained a qualification from Part 141 and Part 101.202 approved training organisations.
- ▶ We want the **test to be accessible** for anyone wanting to fly a drone under Part 101.
  - ▶ To align with our **aim**, we proposed the creation of an online and user-friendly portal, that would allow access to the test and provide all the information and education materials necessary to complete it.

# Drone registration



- ▶ **We are proposing to introduce mandatory registration of drones and their owners.**
  - ▶ We aim to make it easier to communicate directly with owners and thus improve their compliance.
  - ▶ We aim to improve the ability to enforce breaches (when required) by identifying 'who flies what'.
  - ▶ We aim to build better data sets to help manage risk appropriately and inform policies and regulations.
  
- ▶ **Foundational component for enabling integration and developing markets.**

# Drone registration



- ▶ **You would be required to register a drone if:**

- ▶ Your drone weighs 250 grams or over.
- ▶ You are an individual (14 years or over); or
- ▶ You are a business or organisation.

- ▶ **You will not be required to register a drone if:**

- ▶ You fly the drone solely indoors, or
- ▶ You fly the drone solely in a designated area, and under the supervision of a CAA approved organisation, such as MFNZ.

# Drone registration



- ▶ **We want the registration process to be straightforward and distinct from that of traditional aircraft.**
  - ▶ Drone owners would be required to notify their drone(s) and relevant information to the CAA.
  - ▶ Drones would not be included as part of the New Zealand Aircraft Register.
  - ▶ Drone registration would not result in an aviation document being issued.
  - ▶ Drones would be issued with a unique ID number to be displayed on the drone.
- ▶ **We think a drone registration system needs to be:**
  - ▶ Digital, automated and user-friendly, fit-for-purpose and future proof.

# Remote identification



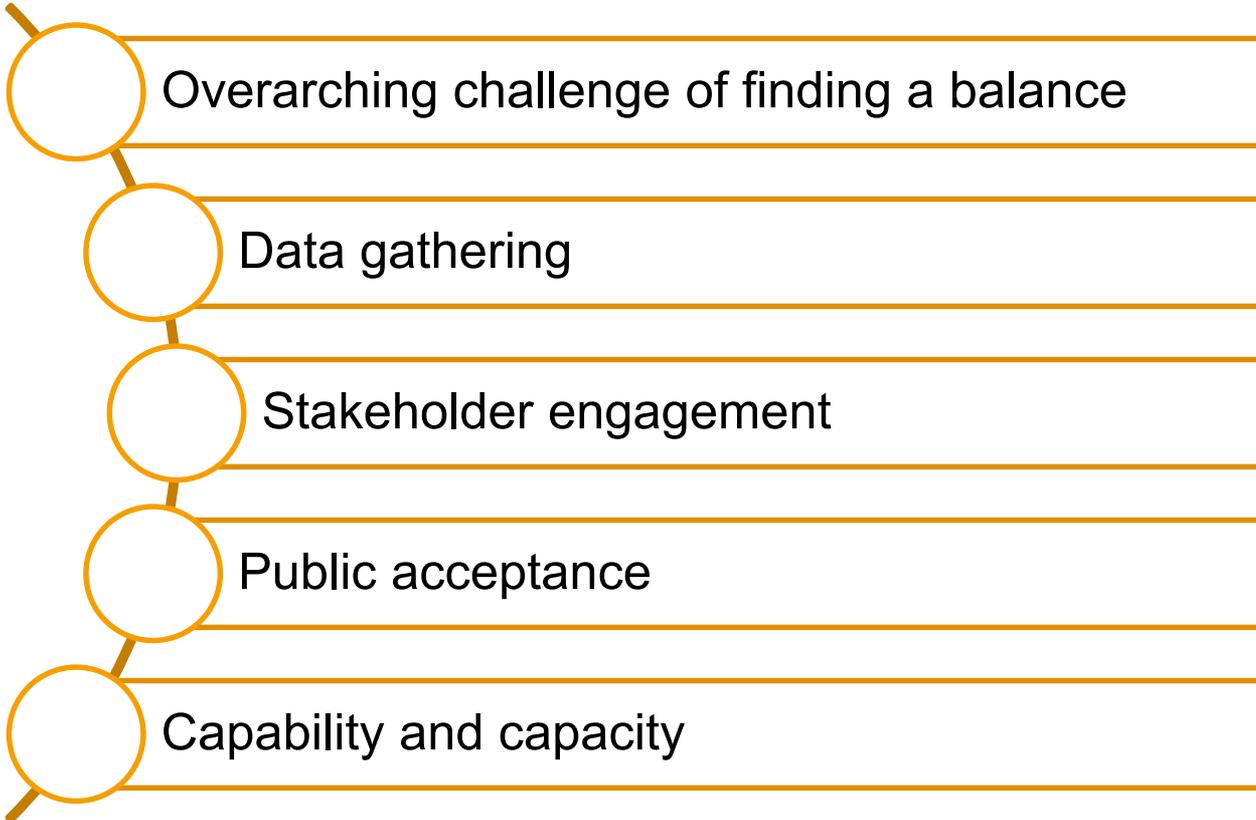
- ▶ What is Remote identification (Remote ID)?
- ▶ We aim to **support drone integration by improving situational awareness for drone pilots and aviation participants sharing the airspace.**
- ▶ We want to **improve enforcement and address safety and national security concerns** around drone use.
- ▶ We propose to mandate the use of remote identification capability on certain drones during flight.
  - ▶ This would require adopting a **technical standard** and developing fit for purpose rules and policies.

# Geo-awareness



- ▶ What is geo-awareness?
- ▶ We aim to **improve situational awareness and compliance of drone pilots**, enabling them to better understand **where they can or cannot fly**.
  - ▶ We are proposing the creation of a single standardised map accessible for all drone pilots.
- ▶ We aim to **enable advanced drone operations (e.g. BVLOS) and integration**.
  - ▶ We are proposing to mandate the use of geo-awareness technology on certain drones and certain operations to alert pilots when they are about to enter a prohibited area and take corrective action.

# Challenges & risks



# What are the next steps?



- ▶ Our next steps and timeline will be informed by the public consultation and post-consultation policy development.
- ▶ The timing of these steps is dependent on the nature of feedback and alignment with other Government priorities.



# Public consultation: Enabling Drone Integration



- ▶ The public consultation started on 6 April 2021 and will run for six weeks, closing on **21 May 2021**.
- ▶ To access the discussion document, *Enabling Drone Integration*, and details on where to make a submission, visit the Ministry's website:  
<https://www.transport.govt.nz/drone-consultation/>
- ▶ The relevant information and links to register for the presentations in the other centres we will visit, i.e. Auckland (6 May), Christchurch (12 May), and Queenstown (13 May), are also available on our website.

Finally...



**QUESTIONS?**

Thank you

