Hi [Name],

Please could you supply copies of the following documents relating to Unmanned Aircraft:

- Platform Play document
- TOR's for the UA Leadership group
- TOR's for the UA Advisory group
- Draft list of UA advisory group members
- Minutes of the last UA Leadership group meeting approx 13 Nov 2018

Kind regards,
Dear [Redacted]

I refer to your request dated 20 November 2018, pursuant to the Official Information Act 1982 (the Act), seeking the following information:

- Platform Play document
- TOR's for the UA Leadership group
- TOR's for the UA Advisory group
- Draft list of UA advisory group members
- Minutes of the last UA Leadership group meeting approx 13 Nov 2018

We are releasing five documents with information within the scope of your request. In addition to the documents you requested, we are also providing you with the Terms of Reference for the UA Cross Government Group, which is closely related to the documents you requested and may be of interest to you. All relevant documents are listed in the appendix and are attached to this letter.

Certain information is being withheld or refused in reliance on sections:

- 9(2)(a) of the Act, as it relates to the privacy of natural persons
- 9(2)(b)(ii) of the Act, as it relates to the unreasonable prejudice to the commercial position of a person
- 9(2)(ba)(ii) of the Act, as it relates to confidential information and damage to the public interest
- 9(2)(f)(iv) of the Act, as it relates to the effective conduct of public affairs through the free and frank expression of opinion by Ministers or officials
- 9(2)(g)(i) of the Act, as it relates to the effective conduct of public affairs through the free and frank expression of opinion by Ministers or officials
- 18(d) of the Act, as the information requested is, or will soon be, publicly available.

Please note that while we are providing you with the Terms of Reference for the UA Advisory Group, the document describes a group which is no longer intended to be formed. This group was initially planned to be made up of representatives of both the Government and private sector. It is now anticipated that a new group will be formed primarily with private sector representation. No Terms of Reference or member list has yet been created for the new group.

[URL: https://www.transport.govt.nz]
The Ministry publishes our Official Information Act responses, so the information contained in our reply to you will be published on the Ministry website. Before publishing we will remove any information that could identify you.

In regard to the information that has been withheld under section 9 of the Act, I am of the opinion that there are no countervailing considerations that make it desirable, in the public interest, to make the information available.

You have the right under section 28(3) of the Act to make a complaint about the withholding of information to the Ombudsman, whose address for contact purposes is:

The Ombudsman
Office of the Ombudsmen
P O Box 10-152
WELLINGTON

Yours sincerely

[Signature]

Richard Cross
Manager, Strategic Policy and Innovation
## Appendix: Document List

<table>
<thead>
<tr>
<th>No.</th>
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<th>Name</th>
<th>Comment</th>
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<tbody>
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<td>1</td>
<td>28 August 2018</td>
<td><strong>Document:</strong> UA Leadership Group Terms of Reference</td>
<td>Released in full</td>
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<tr>
<td>2</td>
<td>29 August 2018</td>
<td><strong>Document:</strong> Advanced Aviation Technologies platform-play</td>
<td>This document was created by the Ministry of Business, Innovation and Employment (MBIE), and has been provided to us with redaction instructions in response to your request. Some information has been withheld under section 9(2)(a) of the Act, as it relates to the privacy of natural persons. Some information has been withheld under section 9(2)(b)(ii) of the Act, as it relates to the unreasonable prejudice to the commercial position of a person. Some information has been withheld under section 9(2)(ba)(ii) of the Act, as it relates to confidential information and damage to the public interest. Some information has been withheld under section 9(2)(f)(iv) of the Act, as it relates to the effective conduct of public affairs through the free and frank expression of opinion by Ministers or officials. Some information has been withheld under section 9(2)(g)(i) of the Act, as it relates to the effective conduct of public affairs through the free and frank expression of opinion by Ministers or officials. Some information has been refused under section 18(d) of the Act, as the information requested is, or will soon be, publicly available.</td>
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<td>3</td>
<td>29 August 2018</td>
<td><strong>Document:</strong> Annex One to Advanced Aviation Technologies platform-play</td>
<td>This document was created by the Ministry of Business, Innovation and Employment (MBIE), and has been provided to us with redaction instructions in response to your request. Some information has been withheld under section 9(2)(ba)(ii) of the Act, as it relates to confidential information and damage to the public interest. Some information has been withheld under section 9(2)(f)(iv) of the Act, as it relates to the effective conduct of public affairs through the free and frank expression of opinion by Ministers or officials.</td>
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<td>Date</td>
<td>Document: UA Cross Government Group Terms of Reference</td>
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<td>5</td>
<td>05 September 2018</td>
<td>Document: UA Advisory Group Terms of Reference</td>
<td>Released in full.</td>
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<td>6</td>
<td>13 November 2018</td>
<td>Document: UA Leadership Group Meeting Notes</td>
<td>Some information has been withheld under section 9(2)(a) of the Act, as it relates to the privacy of natural persons. Some information has been withheld under section 9(2)(f)(iv) of the Act, as it relates to the constitutional conventions which protect the confidentiality of advice tendered by Ministers of officials. Some information has been withheld under section 9(2)(b)(ii) of the Act, as it relates to the unreasonable prejudice to the commercial position of a person.</td>
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UA Leadership Group
Terms of Reference

Purpose

The purpose of the UA Integration Leadership Group's (the Group) role is to provide strategic guidance and oversight of the work programme to achieve the safe integration of UA into New Zealand's airspace.

Role

The Group will:

- develop and approve a programme of work that is consistent with the Government's vision for UA integration
- provide cross-agency strategic thinking and policy direction around issues, risks and opportunities regarding UA
- identify and manage strategic risks to the work programme
- monitor progress towards achieving the objectives and priorities as set out in the work programme
- establish a mandate for agencies to work on UA integration projects
- ensure the UA Advisory Group is briefed as appropriate on issues the Group is considering
- provide a channel to resolve significant issues or areas of disagreement that arise.

The Group will not:

- affect individual agencies' statutory responsibilities
- approve expenditure by any agency related to the delivery of the work programme
- develop policy, rules, regulation or guidance to the aviation sector
- direct government or sector agencies
- undertake any other activities normally done by member agencies.

Membership

The Group is made up of senior officials from the Ministry of Transport (Chair), CAA, Airways, MBIE and an independent appointed representative to provide governance oversight. Representatives from these organisations should be high-level officials) who have a leadership role in their respective sector (for example Deputy Chief Executive level. The members of the Group may invite other agency representatives as required by the work programme with agreement by the Chair.

Administration of the group

The group will have regular scheduled meetings every 6 months. Additional meetings may be called as required. The Ministry of Transport will Chair the Group and act as Secretariat.
BRIEFING

Advanced Aviation Technologies platform-play:
Positioning New Zealand as the location of choice for the emerging unmanned aircraft sector

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<th>Date:</th>
<th>29 August 2018</th>
<th>Priority:</th>
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<td>Security classification:</td>
<td>In Confidence</td>
<td>Tracking number:</td>
<td>0346 18-19</td>
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<th>Action sought</th>
<th>Deadline</th>
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<tr>
<td>Hon Dr Megan Woods, Minister of Research, Science and Innovation</td>
<td>3 September 2018</td>
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<tr>
<td>Agree to the proposed focus areas for the Advanced Aviation Technologies platform-play; Forward this paper to Hon Phil Twyford, Minister of Transport, for discussion, and, Forward this paper to Hon David Parker, Minister for Economic Development, for his information.</td>
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Contact for telephone discussion (if required)

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<tr>
<th>Name</th>
<th>Position</th>
<th>Telephone</th>
<th>1st contact</th>
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<tbody>
<tr>
<td>Dr Peter Crabtree</td>
<td>General Manager, Science, Innovation and International</td>
<td></td>
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<tr>
<td>Dr Kjesten Wilg</td>
<td>Director, Innovative Partnerships</td>
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<tr>
<td>Michelle Schulz</td>
<td>Strategic Partnership Manager, Innovative Partnerships</td>
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The following departments/agencies have been consulted

Ministry of Transport, Civil Aviation Authority, Airways Corporation, Callaghan Innovation, and New Zealand Trade and Enterprise.

Minister’s office to complete:  
☐ Approved  ☐ Declined  
☐ Noted  ☐ Needs change  
☐ Seen  ☐ Overtaken by Events  
☐ See Minister’s Notes  ☐ Withdrawn

Comments
BRIEFING

Advanced Aviation Technologies platform-play:
Positioning New Zealand as the location of choice for the emerging unmanned aircraft sector

Date: 29 August 2018
Priority: High
Security classification: In Confidence
Tracking number: 0346 18-19

Purpose

To seek agreement to the proposed focus area of the Advanced Aviation Technologies platform-play. An overview is provided in Annex One.

Executive Summary

In March 2018, Zephyr Airworks (Zephyr) officially announced its presence in New Zealand via an exclusive with The New York Times which included a welcoming statement from the Prime Minister. This has significantly lifted New Zealand’s profile and presents a unique opportunity to position New Zealand as the global location of choice for the emerging unmanned aircraft (UA) sector.

This emerging sector is innovative and research and development (R&D) intensive. It includes a range of advanced aviation technologies (UA hardware, operations and services). In the short- to medium-term the presence of companies testing and trialling these technologies in New Zealand will grow and scale R&D, and stimulate cross-disciplinary technology innovation relevant to multiple sectors. In the long-term, the development of an UA sector could generate economic and social benefits and new areas of competitive advantage. It also has the potential to advance New Zealand’s global profile as a zero carbon economy.

As for any new and transformative technologies, the UA sector also raises a number of challenges for policy-makers, in particular regarding: safety, national security and public acceptance.

To realise these benefits and manage the challenges, governments need to be able to move at pace with this emerging sector. As indicated in previous advice, New Zealand’s risk-based UA regulatory regime and internationally reputable safety regulator, open for business mentality and a microcosm to develop and bring these technologies to market have so far been the key factors that attracted companies like Zephyr to New Zealand.

To position New Zealand as a location of choice for the emerging UA sector it is important that we remain at the forefront by ensuring our approach to UA operations harnesses the opportunities while addressing the challenges.

The Ministry of Transport (MOT), supported by the Civil Aviation Authority (CAA), Airways and MBIE, is leading the development of a vision for enabling a thriving, innovative and safe UA sector and providing a pathway for safe integration of small drones as well as more advanced UAs in New Zealand. The vision will support the development of a cross-government multi-year work-programme covering regulation, funding and investment, infrastructure and technology, and R&D.
To support this broader vision and the multi-year work-programme, the proposed Advanced Aviation Technologies platform-play is nimble and bespoke, and specifically targeted at the needs of the emerging UA sector and companies testing and trialling, and commercialising advanced aviation technologies.

The platform-play’s objective is to develop New Zealand’s competitive advantage. Working with international and domestic businesses, research organisations, infrastructure providers and regulators, we co-create an enabling platform that brings together all the elements that influence innovators and investors’ decision to conduct R&D, innovate, invest and build a sustained New Zealand presence.

We propose the following immediate focus areas:

- Work with the MOT and the CAA to ensure our regulatory regime and approach continues to safely support this highly innovative sector
- Facilitate testing and trialling activities and identify areas where pro-active public investments in technology and infrastructure are needed
- Support our existing industry, stimulate start-up activities and attract experienced innovators and investors
- Facilitate the development of domestic R&D capabilities and talent.

Under each of these focus areas this paper outlines a set of concrete actions. Some actions are already underway, whereas others need further exploration.

Should you agree to the proposed focus areas, we will work with relevant agencies to provide you with more detailed advice on the specific concrete actions proposed in this paper, including how these align with the broader multi-year work-programme developed by MOT.

We recommend you forward this paper to Hon Phil Twyford, Minister of Transport, for discussion in the coming weeks. We also recommend you forward this paper to Hon David Parker, Minister for Economic Development, for his information.

**Recommended action**

The Ministry of Business, Innovation and Employment recommends that you:

a. **Agree** to the proposed focus areas for the Advanced Aviation Technologies platform-play

   (i) Work with the MOT and the CAA to ensure our regulatory regime and approach continues to safely support this highly innovative sector;

   Agree / Disagree

   (ii) Facilitate testing and trialling activities and identify areas where pro-active public investments in technology and infrastructure are needed;

   Agree / Disagree

   (iii) Support our existing industry, stimulate start-up activities and attract experienced innovators and investors; and

   Agree / Disagree
Facilitate the development of domestic R&D capabilities and talent;

Agree / Disagree

b. Note that should you agree with the proposed focus areas we will work with relevant agencies with more detailed advice on the specific concrete actions proposed in this paper;

Noted

c. Forward this paper to Hon Phil Twyford, Minister of Transport, for discussion; and,

Yes / No

d. Forward this paper to Hon David Parker, Minister for Economic Development, for his information.

Yes / No

Dr Kjesten Wiig
Director, Innovative Partnerships
Science, Innovation and International
MBIE

Hon Dr Megan Woods
Minister of Research, Science
and Innovation
Background

1. The Innovative Partnerships programme’s platform-play is a sector-focused approach for building competitive advantage in transformative and emerging technology areas where growing research and development (R&D) capability and stimulating innovation is of strategic importance to achieving the Government’s vision for a more sustainable, diversified, productive and inclusive economy [1269 17-18 refers].

2. Advanced Aviation Technologies was identified as a key focus areas in late 2017 [1269 17-18 refers]. This paper sets proposed focus areas for the Advanced Aviation Technologies platform-play seeking to position New Zealand as a location of choice for the emerging global unmanned aircraft (UA) sector. An overview is provided in Annex One.

New Zealand has a unique opportunity to become a location of choice for the emerging UA sector

Zephyr’s presence in New Zealand has significantly lifted our profile in the emerging global UA sector

3. UAs are aircraft of all sizes that operate without a pilot on board. In the last decade small short-range remotely piloted UAs (aka drones) have become increasingly common for commercial and recreational activities (eg image capture and analytics, facilitation of labour intensive or difficult tasks).

4. Advances in technologies (eg batteries, software and artificial intelligence, sensors and lightweight materials) are now also providing the basis for the development and adoption of more advanced, larger, longer-range UAs capable of carrying passengers and cargo (eg ‘air taxi’ and package distribution services, delivery of medical supplies) and performing more complex tasks across a range of public and private sectors (eg search and rescue, connectivity, agriculture).

5. This emerging UA sector (drones and more advanced UAs) includes a range of advanced aviation technologies (eg UA hardware, operations and services, see Figure One overleaf), and builds on a wide range of high-tech and innovative industries (eg composite materials, high-value manufacturing, software development).

6. Zephyr Airworks (Zephyr), a flagship company of the Innovative Partnerships programme, is one of the leaders in the development of a fleet of electric and remotely piloted UAs designed to carry goods or up to two people. In March 2018, it officially announced its presence in New Zealand via an exclusive with The New York Times which included a welcoming statement from the Prime Minister.

7. Since the announcement, a number of other international companies developing similar technologies have expressed interest in New Zealand as a possible location for the testing and trialing of their advanced UAs. With this increasing interest, there is potential for New Zealand to be also attractive to companies that are developing specific UAs componentry, or focus on UA operations and services. There are also a number of domestic companies that are developing advanced aviation technologies, and are looking for investors.
The emerging global UA sector is innovative and R&D intensive

8. Start-ups are currently the main actors within this sector, and globally the sector has attracted more than USD $3 billion in funding over the past five years (of which seventy-two percent is venture capital).

9. Alongside technology leaders (eg Google), large traditional aviation companies have invested significantly in technology development and are aggressively aiming to become world-leaders in more advanced UAs (eg Airbus, Boeing). Traditional car companies (eg Porsche) and leading-edge aviation research institutions (eg NASA and German Aerospace Centre) are also investing in these new technologies. As no single player has ended to end capabilities, a number of joint venture partnerships are emerging.

10. The focus of R&D is on automation, energy management, noise and configuration, positioning, detect and avoid systems, and air traffic management (see Annex Two). R&D conducted across these areas is also applicable to a range of other sectors. For example, R&D on automation is applicable to health, hazard management, and agri-tech. There is also significant potential for UAs to be integrated with other R&D intensive sectors (eg space).

The development of advanced aviation technologies in New Zealand has the potential to generate significant benefits

11. As indicated in previous advice, Zephyr's presence has also acted as a catalyst for innovation, R&D, and talent development across our current research, science and innovation system.

12. In the short- to medium-term, the presence of companies testing and trialing advanced aviation technologies in New Zealand will grow and scale R&D, stimulate innovation and build talent and capabilities across a range of aviation technologies (eg positioning, detect and avoid, and air traffic management) and other technology areas (eg batteries, software and artificial intelligence (AI), sensors and lightweight materials, and data analytics). This provides an opportunity to foster new globally recognised niche capabilities in New Zealand relevant to the emerging UA and a range of other sectors (eg space, energy).

13. In the longer-term, the emerging UA sector has the potential to transform how we move goods and people, and how services are being delivered across a range of public and private sectors. As indicated above, UAs are already used for a range of activites (eg image capture and analytics, facilitation of labour intensive or difficult tasks). We expect that over the next three to five years, UAs will be technically able to provide new ways of delivering goods and services in semi-rural and rural areas, generating new economic as well as social

1 Adapted from McKinsey & Company
opportunities. UAs are expected to provide easier access to remote areas and more effective responses in emergency situations.

14. Passenger carrying UA are also increasingly becoming a reality. How big a role services like air taxis will play in New Zealand’s future transport system is yet to be determined. They could provide an alternative urban transport option for time-sensitive passengers and passenger carrying services (eg medical emergencies), enhanced connectivity within the regions (eg serving communities that do not have regular air services) and reduce transport infrastructure costs.

15. The development of advanced aviation technologies also has the potential to advance New Zealand’s global profile as a zero carbon economy. While there is some uncertainty around the extent to which widespread use of UAs would lower emissions, companies and research organisations developing these technologies aspire to provide lower emissions modes of transportations. The focus is on electric battery powered rotors, but there is also increasing interest in the potential for hydrogen motors.

... but it also raises a number of challenges

16. As with any transformative technology area and emerging sector, new activities also raise a number of challenges.

17. The current aviation system has been designed to operate with pilots. Beyond-visual line-of-sight (BVLOS) flight and integration of UAs in the national airspace are challenging policy makers around the world, to identify and manage implications for public safety.

18. Security is also a key challenge. UAs capable of carrying passengers and cargo and performing more complex tasks also have potential criminal and dual use applications.

19. Widespread use of UAs also requires policy makers to manage the interests of existing traditional aviation participants (eg access to airspace, technology requirements).

20. The concept of ‘flying taxis’ or freight delivery drones has also not yet been fully canvassed with the general public. In addition to safety and national security, privacy and public nuisance aspects are likely to be raised both with government and industry.

Government has a critical role to play to realise this opportunity

Governments need to be able to move at pace with this emerging sector and address the challenges it raises

21. As indicated in previous advice, the ability to conduct BVLOS flight and integration of UAs in the national airspace is critical for the emerging UA sector. It is one of the main factors that companies developing these technologies and investors consider when deciding where to locate their activities and investments.

22. Governments have a crucial role in planning ahead to ensure a future-focused regulatory regime and approach, and to consider whether public investments is needed in technology (eg transponders) and infrastructure (eg UA traffic management and supporting infrastructure), to enable safe BVLOS flight and safe integration of advanced UAs, and address the challenges it raises.

23. To fully realise the benefits of the regulatory interventions and investments in infrastructure, governments also have a key role to play in supporting the growth of a domestic industry and the development of domestic R&D capabilities and talent.
Internationally other jurisdictions are increasingly adopting innovative approaches

24. As noted in previous advice, because of the benefits associated with the testing and trialing of these new and transformative technologies and the development of an advanced UA sector, other counties are moving quickly to put in place innovative initiatives that enable BVLOS flight and safe integration of advanced UAs.

25. In Europe, there are now six cities that are looking for partner companies to undertake demonstration projects for the integration of UAs under a special European Commission (EC) initiative. The demonstration projects are scheduled to be run in 2019, and lessons learnt from each demonstration project will inform EC's UA deployment strategy and roadmap.

26. In Singapore, the Civil Aviation Authority of Singapore, the European Aviation Safety Agency and Airbus have agreed to collaborate in the development of safety standards and regulatory requirements as well as operational and technological assessments for the deployment of UAs in urban environments.

27. In the US, the Secretary of Transportation recently initiated a Drone Integration Pilot Program to help tackle the most significant challenges, such as BVLOS, in integrating drones while reducing risks to public safety and security.

28. The above countries are also making investments and supporting the development of domestic industry and R&D capabilities.

The Ministry of Transport is leading the development of a vision for enabling a thriving, innovative and safe UA sector and provide for a pathway for safe integration of UAs

29. As indicated in previous advice, New Zealand's open for business mentality, risk-based UA regulatory regime, and internationally reputable safety regulator have so far been the key factors that attracted companies like Zephyr to New Zealand. To position New Zealand as a location of choice for the emerging UA sector, it is important that we remain at the forefront of the UA development by ensuring our approach to UA operations harnesses the opportunities while addressing the challenges.

The Ministry of Transport (MOT), supported by the Civil Aviation Authority (CAA), Airways and MBIE, is leading the development of a vision for enabling a thriving, innovative and safe UA sector and provide a pathway for safe integration of small drones as well as more advanced UAs into the aviation and wider transport system. A first draft of this has been provided to Minister Twyford this week. You will receive a copy.

30. The aim of this vision document is to provide the sector with an understanding of the government's role, strategic direction and priority areas to achieve safe integration of UAs. It will be used to support the development of a multi-year programme of work covering key aspects such as regulation, funding and investments, infrastructure and technology, and R&D. Public consultation on this vision is planned for September/October, and the vision and a detailed work-programme is scheduled to be considered by Cabinet later this year.

31. Other cities include Ghent with a project for an ambulance drone, Plovdiv with an innovative goods transportation system for the integration of urban-rural territories, and Brussels to lead the application of drones for emergencies.

Withheld under 9(2)(b)(ii) 9(2)(be)(ii) 9(2)(g)(ii) 9(2)(f)(iv)

2 Other cities include Ghent with a project for an ambulance drone, Plovdiv with an innovative goods transportation system for the integration of urban-rural territories, and Brussels to lead the application of drones for emergencies.
We propose the development of an Advanced Aviation Technologies platform-play

A platform-play approach supports the realisation of the broader vision for a thriving, innovative and safe UA sector

34. The platform-play approach is a transformative, sector-focused approach. It involves working with international and domestic businesses, research organisations, and infrastructure providers and regulators to create an enabling platform that brings together all the elements that influence a decision to conduct R&D, innovate, invest and build a sustained New Zealand presence (e.g., supportive regulatory environment, enabling infrastructure, alignment of fundamental and applied R&D).

35. The objective of the Advanced Aviation Technologies platform-play is to develop New Zealand’s competitive advantage. It provides a nimble and bespoke platform, with concrete actions that are specifically targeted at the needs of the emerging UA sector and companies testing and trialling, and commercialising advanced aviation technologies.

36. It supports the broader MOT-led vision and multi-year work-programme to realise safe UA integration by building policy-makers’ understanding of these new and transformative technologies and public acceptance of a future when advanced UAs are more common.

We have identified four broad focus areas:

37. Under each of these focus areas there is a set of concrete actions, some are already underway, others need further exploring.

One: Working with the MOT and the CAA to ensure that our regulatory regime and approach continues to safely support the pace of this highly innovative sector

38. As noted in previous advice, in recent years, New Zealand has worked to position itself as a leader in testing and trialling of advanced UAs. Civil Aviation Rule Part 102 provides an enabling risk-based approach that allows the regulator and operator to work together to identify the best approval pathway on a case-by-case basis.

39. So far, our regulatory regime and approach has proven flexible and effective enough to enable initial testing of UAs like Zephyr’s prototype Cora. MOT and CAA advise that at this stage no regulatory barriers for companies like Zephyr to progress towards aircraft certification and operate commercially have been identified. MOT advises that as part of the multiyear work-programme being developed under the broader vision it will ensure that the regime remains fit for purpose and is able to quickly respond, should regulatory barriers be identified.
40. There are, however, some practical capacity and capability challenges for the regulator and operators. The technological developments require the regulator to make considerations beyond traditional aviation concepts and typical certification methods. The operators often do not have a traditional aviation background do not have a detailed understanding of what is required to certify an aircraft, and their timeframes to bring a service or product to market are often dramatically shorter than those of traditional aircraft. This makes the assessment process resource-intensive for the regulator, and can create frustrations for the operators. 

41. A number of actions have already been taken to mitigate this challenge. Earlier this year MBIE, in consultation with CAA, MOT and Airways MBIE commissioned the development of a risk profile assessment process for enabling limited BVLOS operations In 2017, MBIE and MOT each provided NZD 150,000 from their operating budget to help support this process. A successful Budget bid this year provided CAA with additional baseline funding of NZD 250,000 to build relevant capacity.

42. [Redacted]

43. In addition to capacity and capability of the regulator and operators, to ensure that our regulatory regime and approach continues to safely support the pace of this highly innovative sector it is also important that CAA continues to fully engage with CAA with fora such as the International Civil Aviation Organization (ICAO), Joint Authorities on Rulemaking on Unmanned Systems (JARUS), and EASA. The New Zealand aviation system is developed and operates in the context of a global system and is a key voice in these fora. CAA has been increasing its engagements with these groups to understand new technology and to influence the design of future guidelines and standards. To be at the forefront it is important that New Zealand has a strong and innovative voice in these fora.

Two: Facilitate testing and trialling activities and identify areas where pro-active public investments in technology and infrastructure are needed

44. Supportive infrastructure and technologies are key for the development of the UA sector, and an important factor that companies developing advanced aviation technologies consider when making a decision on a location for their testing and trial, and commercial activities. Testing and trialling activities also play a key role in supporting and accelerating the policy development process.

45. Airways are conducting a number of trials intended to inform the development of a pathway to enable safe and effective UA integration, and at the same time support activities of companies like Zephyr.

46. [Redacted]

4. Automatic dependent surveillance—broadcast (ADS-B) is a surveillance technology in which an aircraft determines its position via satellite navigation and periodically broadcasts it, enabling it to be tracked. Under New Southern Sky, ADS-B is proposed to be mandated for aircraft operating in controlled airspace by 2021. Controlled airspace is airspace where there is an air traffic control service provided for the safety and efficiency of aircraft operations.
Airways is also conducting a trial with the Auckland Council prototyping technologies for a UA traffic management system (UTM) to determine how UAs can be managed in an urban environment to enable safe and efficient low-altitude airspace operations.

Airways and MBIE will continue to work closely with companies to understand their requirements to test and trial new technologies in various situations, and help facilitate trials in New Zealand within the existing rules. For example, we intend to investigate current and potential future demand and applications for dedicated testing sites.

We also intend to explore city-based pilots similar to those implemented in Europe and Singapore. Establishing these would require careful consideration of relevant safety requirements and risks mitigations, and the imperative to operate within the context of a global aviation system.

Three: Support our existing industry, attract experienced innovators and investors, and stimulate start-up activities

We have existing industry comprising UAV manufacturers (eg Vickers) and component producers (eg Dotterel), and operations and services (eg Flightcell). New Zealand Trade and Enterprise (NZTE) and CI can support these companies to undertake R&D and internationalise. The introduction of R&D tax credits will also create additional incentives and support.

To support our existing industry effort will also be required to build strong connections with international innovators and investors who are experienced at growing companies in this sector. These innovators and investors will bring knowledge about the science and innovation that is needed, the international regulatory environment and connections to customers for the new and innovative products. As part of the platform-play we, together with NZTE, CI and Airways, are working to develop a targeted engagement plan to connect domestic industry with international innovators and investors.

It is also important that we educate the local investor base. This will be to lift their knowledge of the opportunities in investing in companies in this sector, along with connections and introductions to international investors, and how to best work with them. Hon Parker’s work to strengthen our early stage capital markets is important here.

There are a number of broad-based initiatives to support and stimulate start-up activity. These include government co-funding for incubators, accelerator programmes, and support for the commercialisation of public research through the Pre-seed accelerator fund. These all aim to stimulate the pipeline of innovative, high-tech start-ups from both the public and private sector. Incubators and accelerators are particularly important for stimulating and connecting start-ups ecosystems, often acting as hubs for entrepreneurs, investors, and innovators.

The incubator programme is currently under review. MBIE will shortly be making recommendations to you on the future of the programme, including how we can better align their focus and connect it into the platform-plays. These connections should stimulate and focus activity from New Zealand entrepreneurs and investors, and provide support for early-stage start-ups or entrepreneurs looking to relocate to New Zealand as a result of the platform-play value proposition.
53. Innovation challenges are also a common vehicle to stimulate start-up activities, and accelerate the development of emerging sectors and transformative technologies. Under the Innovative Partnerships programme, we are currently developing a partnership between Airbus, for a programme of innovation challenges placed in The target audience are post-graduate students and young entrepreneurs with the objective to generate start-up ideas/R&D programmes to be advanced here in New Zealand.

**Four: Facilitate the development of domestic R&D capabilities and talent**

54. We have some existing R&D capabilities. These existing capabilities provide the base to further develop our fundamental and applied R&D on simulation, batteries, AI, detect-and-avoid technologies, integrated air-traffic-management (ATM) systems.

55. As part of the platform-play, we will continue to facilitate the establishment of partnerships between our research organisations and international companies. We also intend to explore how we can build on existing relationships with international partners (eg NASA and German Aerospace Centre), to enhance international connections and R&D capabilities in our domestic research organisation.

56. The development of a domestic talent base will also be critical. Similar to other high-tech, new and emerging sectors (eg space, ICT), there is a global shortage of talent that has the necessary base skills. This is a problem for industry as well as the regulator. Industry plays a key role in the development of talent. Zephyr is currently funding postgraduate students and engaging with the universities about training graduate engineers. Rocket Lab is taking a similar approach. We intend to discuss with relevant agencies, the industry and main tertiary providers what other practical initiatives may be put in place.

**Next steps**

59. Should you agree with the proposed focus areas, we will work with relevant agencies to provide you with more detailed advice on the specific concrete actions proposed in this paper, including how these could be progressed and aligned with the MOT-led broader multi-year work-programme. Indicative timeframes are provided in Annex Two.

60. We recommend you forward this paper to Hon Phil Twyford, Minister of Transport, for discussion. We also recommend you forward this to Hon David Parker, Minister for Economic Development, for his information.
Annexes

Annex One: Draft concept platform-play
Annex Two: Upcoming advice on specific actions.
Annex One: Advanced Transport Technologies platform-play

[Overview A3]
### Annex Two: Upcoming advice on specific actions

<table>
<thead>
<tr>
<th>Focus areas</th>
<th>Withheld under 9(2)(f)(iv)</th>
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<th>Indicative timeframes</th>
<th>Agencies and partners involved</th>
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<td>Facilitate testing and trialling activities</td>
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<td>Expand the establishment of city-based pilots</td>
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<td>![Redacted Text]</td>
<td>November</td>
<td>MBIE, Airways, CAA, MOT</td>
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<td>Support our existing industry, attract experienced innovators and investors, and stimulate start-up activities</td>
<td>![Redacted Text]</td>
<td>![Redacted Text]</td>
<td>November</td>
<td>MBIE, Airways, CI and NZTE</td>
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<td>Develop targeted engagement plan to connect domestic industry with international innovators and investors.</td>
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<td>Programme of Innovation challenges</td>
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<td>![Redacted Text]</td>
<td>November</td>
<td>Withheld under 9(2)(f)(e) and 9(2)(ba)(ii)</td>
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Advanced Transport Technologies platform-play:
Positioning New Zealand as the location of choice for the emerging global unmanned aircraft (UA) sector

Why the UA sector?

The UA sector is growing and future-focused ...

Globally, small and short-range UAs, aka drones, have become more and more common for commercial and recreational uses.

UAs capable of carrying passengers and cargo are becoming a reality.

The emerging UA sector has the potential to transform how we move goods and people, and how services are being delivered across a range of public and private sectors.

... innovative and R&D intensive

Start-ups are currently the main actors within this sector.

$3 billion in funding to start-ups over the past five years.

Technology leaders, large traditional aviation and car companies are also investing in these new technologies.

Key focus areas for R&D investments are in:
- Aviation technologies (e.g., positioning, detect and avoid, and air traffic management)
- Other technology areas (e.g., batteries, software, Artificial Intelligence, sensors and lightweight materials, and data analytics)

How can we develop our competitive advantage?

We have a unique opportunity to realise it:

- We have an established regulatory regime and internationally reputable safety regulator
- We provide a microcosm to develop and bring these technologies to market
- We are in a good place to conduct and invest in R&D
- We have some existing capabilities

Withheld under 9(2)(g)(i) and 9(2)(f)(iv)

We need to build specific R&D capabilities and talent, and support our domestic industry to develop.

The Ministry of Transport is leading the development of a vision for safe integration of UAs in New Zealand.

The platform-play is nimble and bespoke, with specific concrete actions that are specifically targeted at the needs of the emerging UA sector:

FOCUS AREAS & ACTIONS

Ensure that the regulatory regime and approach continues to safety support this highly innovative sector

- A profile assessment process for enabling limited BVLOS operations
- Input into MOF review of regulatory regime.

Support existing and stimulate start-up activities and attract experienced innovators and investors

- Support existing technology trials
- Investigate current and potential future needs for dedicated testing sites
- Explore the establishment of city-based demonstration pilots

- Use existing levers to support companies to undertake R&D and internationalise
- Develop a targeted engagement plan to connect domestic industry and investors with international innovators and investors
- Develop a programme of innovation challenges

- Facilitate the establishment of partnerships between our research organisation and international companies and research organisations
- Engage with industry and tertiary providers to support practical talent development initiatives

Withheld under 9(2)(g)(i) and 9(2)(f)(iv)

Withheld under 9(2)(b)(ii) and 9(2)(ba)(i)

where we currently are

where we need to be to retain and build our competitive advantage
UA Cross Government Group
Terms of Reference

Purpose of the Group

The UA Cross Government Group (the Group) comprises representatives of agencies involved in the UA integration. It provides a forum for agencies to facilitate greater collaboration and coordination on UA integration issues.

Role

The Group will:

- identify potential barriers or opportunities that would be useful to consider as part of the broader UA integration work programme
- identify areas where joint Ministerial advice would be beneficial
- provide operational and technical advice on matters relating to the UA integration work programme
- provide a forum for sharing interests and intelligence regarding UA
- if requested to do so, identify suitable experts within their organisations to participate in project working groups that provide technical advice on the UA Integration work programme.

The Group does not:

- endorse expenditure by any agency related to the delivery of the work programme
- develop policy, rules, regulation or guidance to the aviation sector
- direct government or sector agencies
- undertake any other activities normally done by member agencies.

Membership

The Group is made up of officials (Manager or Principal level) from: Ministry of Transport (Chair), CAA, MBIE, Airways, Police, DPMC, Defence, Office of the Privacy Commissioner, DOC, Callaghan Innovation, NZTA, LGNZ.

Administration of the group

The Group will meet quarterly in Wellington. The Ministry of Transport will Chair the Group and act as Secretariat.
UA Advisory Group
Terms of Reference

Purpose of the Group
The UA Advisory Group (the Group) is a cross-agency group comprising representatives of agencies involved in the UA integration provides a forum for agencies and industry to facilitate greater collaboration and co-ordination on UA integration issues.

Role
The Group will:

- identify potential barriers or opportunities that would be useful to consider as part of the broader UA integration work programme
- identify areas where joint Ministerial advice would be beneficial
- provide operational and technical advice to the UA Integration Leadership Group on matters relating to the UA integration work programme
- provide a forum for sharing interests and intelligence regarding UA
- if requested to do so, identify suitable experts within their organisations to participate in project working groups that provide technical advice on the UA Integration work programme.

The Group does not:

- endorse expenditure by any agency related to the delivery of the work programme
- develop policy, rules, regulation or guidance to the aviation sector
- direct government or sector agencies
- undertake any other activities normally done by member agencies.

Membership
The Group is made up of officials (Manager or Principal level) from: Ministry of Transport (Chair), CAA, MBIE, Airways, Police, DPMC, Defence, Office of the Privacy Commissioner, DOC, Callaghan Innovation, NZTA, LGNZ, UAS sector representative [TBD], other aviation sector representatives [TBD].

Administration of the group
The Advisory Group will meet quarterly in Wellington. The Ministry of Transport will Chair the Advisory Group and act as Secretariat.
1. Apologies

- Graeme Sumner (Airways) was an apology – Trent Fulcher (Airways) stood in for him

- Other attendees:
  - Matt Amos (LINZ), was in attendance.
  - [Redacted] was in attendance
  - [Redacted] provided a secretarial role
  - Richard Cross (MoT), Tom Forster, Karl Simpson and [Redacted] (MoT) were in attendance
  - Klisten Wig (MBIE) and Michelle Schulz were also in attendance.
3. Vision paper – NOTE LINZ left at the beginning of this item

I talked through where we are at in the Vision paper process. He noted that the paper went out to a targeted group of stakeholders on 13 September for a one month engagement period. A number of stakeholders wanted an extension and we have subsequently extended the closing date for feedback till 15 November. We hope this extension will allow for more feedback particularly from key interested parties like UAV NZ.

- [Redacted] noted that because of the extension we have delayed going back to the Minister until the New Year. [Redacted] has been looking after consolidating feedback on the vision and he noted that there had been 21 responses to date.

- [Redacted] talked about the responses received in reply to the public engagement process on the Vision Paper. [Redacted] provided general feedback on the common themes among the responses.

- Kirstie noted that the wider aviation story needs to be discussed.

- Richard noted our conversations with the GA community and their concerns with our approach to UA. He noted that there is a need to communicate better with the sector to explain what the work means for them.
• National airspace policy statement was discussed and how it relates to our Vision
UA Benefits study

Withheld under 9(2)(a)

• provided details on the aims and intentions of the UA Benefit Study. He indicated that Market Economics Limited has been chosen as the preferred supplier to complete the study. Initial negotiations on the study will commence on 13 November 2018, and initial results are aimed to be provided in December 2018. The contract is expected to finish in March 2018.

• Peter, as part of this study, suggested that the economic value of recreational UA use should be quantified as it may help to provide more insight into the social licence aspect of UA operations.

• Steve asked about the scope of the study and whether there will be a differentiation between the smaller and larger UA.

4. Testing and trialling, and other updates

Withheld under 9(2)(b)(i)

• Michelle noted that joint agencies had a meeting with last week. At the meeting, described what their concept of operations would be. She noted that the group agreed to look at the potential of doing some demonstrator pilots with

Withheld under 9(2)(b)(ii)

• Michelle will send some minutes from the meeting to the group

• Michelle noted that the testing and trialling group will continue to work with and other companies to help progress our UA work

Withheld under 9(2)(b)(iii)
Airways update

- Trent provided an update on the trial work Airways is doing and in particular how some of the technology being trialled could help with some of the challenges we have in the UA area e.g. UA operating too close to aerodromes etc.
- Trent noted that the purpose of the trial work is to help inform policy decisions and help provide data on some of the solutions being considered e.g. low cost ADS-B solutions, replacements for Airshare etc.

5. Joint comms programme
- Kirstie noted that we need shared messaging on all of the UA and aviation work (e.g. New Southern Sky)
- An initial meeting with all the players around the table to discuss workstreams and what we need to cover will be had in the next few weeks - this will cover aspects like challenges, opportunities and how we leverage any comms through existing work

6. Any other business
- Nothing further was raised

Actions log

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Next meeting – February TBC