



Developing the Aotearoa New Zealand Aerospace Strategy

Submission on developing the Aotearoa New Zealand Aerospace Strategy

AgResearch

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Your name and organisation

Name	John Morris: Business Development Manager
Organisation (if applicable)	AgResearch [REDACTED] [REDACTED] [REDACTED]

Overview of the Aerospace Strategy

- Question 1:** Do the four areas above provide the right basis for the Aerospace Strategy?
- Question 2:** What are the critical factors that you see for aerospace sector development?
- Question 3:** How would an Aerospace Strategy help you?

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Question 1: The four areas provide a strategic framework as they cover vision, pillars, goals and action plan. An appropriate regulatory environment for the aerospace sector that encourages private sector investment and technology development will be needed. Regulatory certainty is a key requirement for investors.

Question 2: It is suggested that the strategy needs to cover the importance of technology advances in agriculture and the potential positive impact on the broader aerospace sector. The impact of climate change and significant labour shortages in NZ will require advanced technological solutions.

Globally, the rise of precision farming is enabling farmers to manage crops to achieve efficiency of inputs such as water and fertilizer, and to maximize productivity, quality, and yield. Speed and high precision will be key in future farming systems. In the past 10 years, precision farming has experienced unprecedented growth around the world (www.croplife.org). The widespread adoption of precision farming will be important for New Zealand's global competitiveness.

Satellite technology and drones are revolutionising farming. Remote sensing satellites provide key macro-level data for monitoring soil, snow cover, drought and crop development. Rainfall data helps farmers plan. Drones offer farmers major cost savings, enhanced efficiency, and greater profitability. Drones can map farms, report on crop health, enable precision spraying, and monitor livestock, irrigation systems, diseases and pests. Sustainability outcomes include biosecurity benefits and the reduction of harmful agricultural run-off.

(<https://www.businessinsider.com/agricultural-drones-precision-mapping-spraying>).

Furthermore, drone technology contributes to broader aerospace industry development including avionics, advanced electronics, advanced materials, imaging technology and battery technology. We have noted the M.E Consulting study commissioned by MBIE and the Ministry of Transport in 2019 which highlighted the potential economic impact of drones on the NZ economy. Drone technology that includes beyond the visual line of sight (BLOS) development could increase the value to the NZ economy by between \$3.2 billion and \$5 billion per annum.

(<https://www.transport.govt.nz/area-of-interest/technology-and-innovation/drone-benefit-study/>)

Question 3: The World Economic Forum believes that drones are “democratising the skies and enabling new industry entrants”. They state that “laying the right policy foundation and platforms for industry cooperation today, both through smart government regulation and industry-driven standards, will accelerate the adoption of new use cases and business models once the enabling technology and infrastructure is mature”.

(<https://www.weforum.org/communities/drones-and-tomorrow-s-airspace>).

[REDACTED]

[REDACTED]

Area One - A strategy for building our aerospace sector

- Question 4:** Is the 2030 Future State set out in a way that enables New Zealand to build on its existing advantages to develop a leading place in the global aerospace economy?
- Question 5:** Will the 2030 Future State support your ambitions for growth and participation in the sector?
- Question 6:** What barriers are there to optimising sector growth?
- Question 7:** How could the government and the sector work together to achieve the 2030 Future State?
- Question 8:** How can the Government enable Māori ambitions for the sector?

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Question 4: The document provides a useful framework, but it is imperative that the strategy identifies NZ's existing advantages and constraints. As mentioned above, climate change and labour shortages in agriculture need to be addressed.

Question 5: The role of drones in agriculture needs to be addressed. Without this, our ambitions are unlikely to be met.

Question 6: Regulatory certainty including airspace integration is currently a barrier to entry. MPI initiatives such as Drones on Farms and the MBIE Airspace Integration Trials programme are seeking to address this. The Ministry of Transport has stated that "the current regulatory framework limits the ability to integrate drones effectively into New Zealand's civil aviation system. It is not sustainable for more diverse and advanced drone operations on a wider scale, and may no longer effectively tackle the risks triggered by the growth and popularity of drones" (www.transport.govt.nz/assets/Uploads/Discussion/EnablingDroneIntegration.pdf).

The Aerospace Strategy would also benefit from linking in with future Government telecommunication plans including rural internet bandwidth connectivity as this will be key to enabling communications.

Question 7: The government should continue to work with private sector drone companies in areas such as drone pilot training and opening up drone flight corridors (see Japan as the world leading case study in drone industry development and the recent UK drone superhighway announced).

Question 8: Drones contribute significantly to sustainable agriculture and will contribute positively to Kaitiakitanga.

Area Two - Building strong foundations (Three Pillars)

- Question 9:** What do you think of the Three Pillars and do you think they will support the 2030 Future State?
- Question 10:** What else would you like to see in the Three Pillars?
- Question 11:** What actions and initiatives could the sector focus on to support the Three Pillars?

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Questions 9 to 11: The three pillars are useful, especially the “future focussed government” and “aerospace nation” pillars. The experience of Japan is important as they are building a drone culture across civil society. Japan does need to ensure wider adoption of drone technology in farming and there is some more work to be done in this space. Japan’s journey in drones commenced in the 1980’s and the country is outpacing other countries in devising regulations that will increase drone use to benefit the nation's citizens.

We need practical actions to support the pillars. This includes how airspace will opened-up for drones. See below for actions that Japan has taken in this regard.

Area Three - Goals for 2030

- Question 12: What do you think of the Goals for 2030?
- Question 13: Are the goals framed in a way that will enable New Zealand to build on its strengths and comparative advantages to achieve the 2030 Future State?
- Question 14: What activities and milestones can help us achieve these Goals?
- Question 15: Where do you see yourself in realising these Goals?

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Questions 12 to 15: The goals are ambitious and the actions to achieve these will be key. A key goal needs to include airspace integration. This will require continued close co-ordination with CAA, the drone industry and farming organisations. [REDACTED]

See the next section for practical actions that will be needed to support the goals.

Area Four - Pathway to the 2030 Future State

Question 16: What policies, ideas, actions, and/or initiatives would you like to see in the Action Plan to help achieve the ambitious 2030 Future State?

Question 17: What would be the benefits of these actions and how would they help grow the New Zealand aerospace sector?

Question 18: How would you like to be involved in the delivery of the Aerospace Strategy?

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Questions 16 to 18:

Key actions needed include:

- Based on a clear policy statement that will need to provide regulatory certainty, a strategy for public and private investment in drone technology will be needed. This should exploit competitive advantages and identify niche areas where New Zealand can compete and which contribute to the broader aerospace sector. New Zealand may not be able to out-compete countries such as China in manufacturing costs but areas such as systems engineering, IT and software development can be maximised with benefits for the broader aerospace sector.
- Continued collaboration between the CAA and industry on drone pilot training to build capability in industry and encourage new entrants and agricultural service providers to adopt the technology. Safety will need to continue to be important.
- Fast-track the move towards integrated airspace. In 2021, the Ministry of Transport set out a 5 year time-line for achieving this. Building on the MBIE Airspace Integration Programme, work with the CAA and industry to establish a wide agricultural drone flight zone that is below the flightpath of conventional aircraft. The Japanese government has passed recent laws to allow for special "de-regulation zones" for private companies and universities to test new drone technology. Japan can be a useful case study that can be used to guide regulatory development in NZ.