Submission on developing the Aotearoa New Zealand Aerospace Strategy

Name	Dale Pearce, Dyan Finkhousen, Tom Cooke
Organisation	Shoshin Works

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?

Question One: The four areas establish a sound starting point to enable the right team to expand and activate the Aerospace Strategy.

New Zealand's space activities and engagements should be sustainable and aligned with our national economic and security and interests. This underscores the importance of a collaborative, cross-government approach to space policy development – with kaitiakitanga (guardianship) as a guiding framework to ensure that space, and its extraordinary benefits, remain accessible for all.

Question Two: Aerospace sector development needs to include a thoughtfully architected system of collaboration that leverages sector-wide and cross-sector connectivity, awareness, velocity, precision, and resilience. One that enhances synergies, complementary capabilities, and deconflicts redundancies. All critical factors for aerospace sector success.

Markets and their forces are moving quickly – straining economic systems that aren't designed for ecosystem wellness. The New Zealand strategy for aerospace sector development must be designed to thrive within the context and dynamics of the global aerospace market. The global market is shaped by the velocity and interconnectivity of the digital era – and this context, and these forces, will directly inform the health, resilience, and sustainability of the New Zealand aerospace sector.

The New Zealand Aerospace Strategy as presented could be strengthened even more with a clear articulation of the actions required to achieve these critical factors. To thrive in the global digital economy, the strategy will need to embrace ecosystemic models, establishing the infrastructure and governance systems that elevate New Zealand aerospace ecosystem resilience.

The five frameworks proven to establish ecosystem wellness include:

Ecosystemic Futures: Future scenario portfolio development, assessment, readiness

Ecosystemic Intelligence: AI-enabled, always-on synthesis that informs strategy, operations

Ecosystemic Strategy: Configures mission-based and place-based networks aligned around a shared vision

Ecosystemic Operations: Orchestrate, optimize the performance of integrated networks

Ecosystemic Academy: Integrates ecosystemic competency development with work, worker, and workforce innovation strategies

Question Three: An effective New Zealand aerospace strategy helps us establish valuable synergies in our ongoing work with NASA and the global aerospace sector. In our multi-year work with NASA to define fifty-year aerospace futures; digital-era innovation and people development frameworks; ecosystem wellness; and democratized design, development, and deployment – we have identified global expert networks, knowledge assets, and operating frameworks that will inform aerospace innovation and resilience in the decades ahead.

Mapping, activating, orchestrating, and optimizing the New Zealand aerospace sector in a way that thrives within the context of the global aerospace sector is valuable for New Zealand, the global ecosystem, and certainly beneficial for our collective efforts.

A New Zealand aerospace strategy will also help us establish high-value, cross-sector synergies in our work with New Zealand market leaders navigating the shift to ecosystemic models to unlock greater velocity, innovation, prosperity, and resilience within the New Zealand economy. The New Zealand aerospace strategy will reinforce the high-value linkage between the entrepreneurs, visionaries, and market leaders in New Zealand.

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?

Question Four: The 2030 Future State is articulated in a manner that establishes clear statement of strategic intent and assets.

The ability to enable New Zealand to build on the entirety of its existing advantages to develop a leading place in the global aerospace economy, however, depends additionally on the establishment of a well-articulated system of ecosystemic futures, intelligence, strategy, operations and learning frameworks. Unlike the post-industrial revolution economy, the model for success in the digital economy is exclusively the domain of ecosystemic strategies.

Futureproofing and optimizing an important economic sector such as aerospace requires cross-sector and multi-region collaborations that leverage multi-decade scenario planning, continuous market intelligence, and orchestration of ecosystem synergies and collaboration.

Question Five: The 2030 Future State will support our ambitions for growth and participation in the sector by elevating the collaboration within the sector, across sectors within New Zealand, and within the growing global aerospace economy. Our work with public and private sector ecosystemic models is necessarily enabled by visionaries with the leadership capacity and relationships to unlock latent value across a broad economic system. We see this potential very clearly possible within the New Zealand aerospace strategy initiative.

Question Six: The greatest barriers to optimising sector growth will be increasingly outdated mindsets and methodologies embedded in past successes - the persistent propensity to rely on traditional operating models, networks, and business strategies. Lack of familiarity with - or delays in implementing ecosystemic models will ensure that value remains trapped in fragile supply chains, inefficient entrepreneurship and innovation models, and increasing rates of skills obsolescence.

Question Seven: The government and the sector will achieve future state success by extending the future scenario planning horizon well past 2030 to consider at least a thirty-year planning horizon, and by evolving traditional procurement to ecosystemic orchestration – monitoring complementary innovations and evolution across other sectors in New Zealand and within the global aerospace sector, and leveraging the five frameworks proven to establish ecosystem wellness:

Ecosystemic Futures: Future scenario portfolio development, assessment, readiness

Ecosystemic Intelligence: AI-enabled, always-on synthesis that informs strategy, operations

Ecosystemic Strategy: Configures mission-based and place-based networks aligned around a shared vision

Ecosystemic Operations: Orchestrate, optimize the performance of integrated networks

Ecosystemic Academy: Integrates ecosystemic competency development with work, worker, and workforce innovation strategies

Question Eight: More than enable, the government has a responsibility to activate new ambition and embrace the potential that already exists.

- Māori need to participate in the resourcing discussions and need to be involved with funding allocation and programme design.
- There is a real educational opportunity, specifically where it integrates Cultural and Contemporary Knowledge and Kaupapa. Such approaches have been successful in New Zealand as a driver of Year 1 University Success for Māori and participation in STEM.
- Māori must participate as co-creators of the system.
- Indigenous investment in the Māori Economy is biased towards Agriculture and Horticulture where head winds relating to climate change, as an example, exist. There is potential to extend investment into the Aerospace Sector, to help address problems in Agri-Food and then to extend that investment into areas that benefit Māori portfolio.

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?

Question Nine: The Three Pillars establish a clear vision for the strategic infrastructure and actions needed to support the 2030 Future State and would benefit from (**Question Ten**) the expanded articulation of the relationships, competencies, and potential collaboration assets within the extended value ecosystem. Specifically, we would recommend an expanded articulation of the role the New Zealand Aerospace 2030 Future State will serve within the context of the global arena.

In the digital era – the world enjoys greater connectivity in commerce, academia, and society. Exports are referenced but represent only a facet of the vibrant relationship the Future State will enjoy on the global stage.

Additionally, we recommend a detailed, consistently updated articulation of the synergies possible through collaboration with other sectors - cross-pollination of innovation, operational best practices, and talent development. Specifically, this will aid in the creation of pathways where innovations in aerospace can find their ways into other sectors, and vice-versa - i.e., the exploitation of large amounts of data is highly valuable in both finance and aerospace. There is significant potential for support between sectors to take advantage of complementary knowledge and technological developments.

The actions and initiatives required to succeed with the three pillars (**Question Eleven**) are clearly outlined in the Ecosystemic Solutions playbook – establishing sound frameworks for:

- assessing and consistently updating future scenario portfolios,
- managing an 'always-on' ecosystemic intelligence system,
- establishing ecosystemic strategies and models that orchestrate high-yield investment, innovation, and advanced work design,
- establishing ecosystemic pathways for talent development, engagement, and prosperity, and
- establishing ecosystemic regulatory innovation and governance protocols to optimize safety, adoption, and innovation velocity.

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?

The Goals for 2030 (**Question Twelve**) establish clear alignment with essential strategic priorities for the sector and society. A unique challenge for the goals in Area 3 is that they depend on assured access to space and availability of data being relayed from space. Geopolitical conflicts as the one seen in Russia and Ukraine highlight the use of space for purposes identified in this area as well as how those same space assets are now categorized as potential targets in modern day conflict. If there are direct investments goals aligned to this area only to be negated as a result of conflict in, from or through space, the investments would lose the benefit the New Zealand government is seeking. The New Zealand government would provide additional benefit for investments made in this sector by including opportunities to validate capabilities, providing assured access to space, and by working collaboratively to de-risk investments and mitigate degraded or denied environments.

To strengthen the potential for a shared vision, unified effort, and to ignite action against these goals (**Question Thirteen**) we recommend the expansion of these goals to articulate desired outcomes; extend the strategic horizon; identify the critical stakeholders; and confirm definitions for and metrics of success and digital era infrastructure requirements.

Question Fourteen: As noted above, it is essential that activities and initiatives are well aligned to our desired impacts and end states. New Zealand suffers from poor innovation yield and low productivity. It will be important to consciously include effort to enhance ecosystem wellbeing and innovation impact through the adoption of Exosystemic models and methods. Effective execution of strategy requires that it be translated into specific and actional objectives, measures, targets and initiatives. This process must be data driven and evidence based yet so often we see existing initiatives retro fitted to the strategic goals and new initiatives adopted to appease stakeholders with the loudest voice.

As such, the process by which activities and milestones is arrived at must be considered. In our experience such processes involve an always on, AI-enabled ecosystem monitoring system; a bi-annual ecosystemic strategy review; monthly investment cadence and bi-weekly operational and collaboration portfolio review. This sprint-orientation to the intelligence, strategy, investment, and operational review is much more aggressive than the cadences to which the sector is accustomed – but is essential to enable the sector to maintain resilience and leadership in the global digital arena.

Our role (**Question Fifteen**) in the ecosystemic model would be to orchestrate, educate, and enable the high-value insights and interactions for the New Zealand Aerospace strategy. The Ecosystemic Operating Model, briefly referred to in this document, addresses two fundamental levels of networked function – transformational innovation and operating models within the digital era:

1. Ecosystemic Architecture: The fundamental governance structure within which networked innovation, operations and regulation occur.
2. Democratized and Component Capabilities: The underlying competencies, capacity, technologies, connections, operations, and innovation within the aligned networks.

These inter-related functions describe HOW innovation, operations, technology, and talent can be organised systemically to enable a vibrant National Aerospace Ecosystem. Components are assembled in a way that enhances synergies and complementarity with other components to create new value in new ways.

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?

The Action Plan (**Question Sixteen**) should integrate a more expansive view of the potential collaboration and commercial landscape and a longer-term horizon within scope for its strategic planning process. Within that ecosystemic scope - the intelligence, investment, innovation and operating, and talent development cycles should be orchestrated with a more dynamic cadence than the sector has experienced in prior decades. This iterative approach to high precision, high-velocity sector orchestration will be the key to (**Question Seventeen**) high-yield, resilient growth.

- Regulatory innovation and its linkage to technology development, such as what would be needed in autonomous flight profiles, will be important so one does not stand in the way of the other
- An always-on listening capability will be essential to determine where global investments are being made to help inform where New Zealand aerospace can buy or build
- Run parallel ops to increase velocity alongside longer term deep tech development
- Activate within the Spacely marketplace to establish a national aerospace sector talent engagement and development marketplace
- Test advanced work and workforce design structures
- Determine what technology and IP can be exported. U.S. companies are at times challenged by ITAR regulations being over constraining to opening new markets
- Do not depend solely on universities to provide high skilled workforce, create multiple pathways to participate and broaden the talent pool of primary and tertiary talent

We would recommend our involvement (**Question Eighteen**) at multiple levels:

- Collaborating closely with you to update the strategy, pillars, and action plan to integrate the transformational potential of **Ecosystemic Strategy** and **Ecosystemic Operations**.
- Testing and refining the strategy through AI-powered **Ecosystemic Futures** analysis designed to test and retire assumptions continuously (much more frequently than every 5 years).
- Implement **Ecosystemic Intelligence** to provide all ecosystem stakeholders with dynamic, relevant insights through our always-on listening system. Tuned to the unique needs of the ecosystems and participants – the system drives velocity in responsiveness to market shifts and improves precision in decisions and actions.
- Investment in work, talent and workforce design are essential to success for the next generation of New Zealand aerospace. We have a strong interest in establishing the **New Zealand Aerospace Talent Cloud** and **Ecosystemic Academy**. Talent models are changing and a more collaborative approach to accessing and utilising talent is required. In doing so we would demonstrate a proven enterprise model on a national scale, something that can be scaled and duplicated across other ecosystems in New Zealand.