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Page 3: Submitter Information

Q1

Personal Information

Name

Richard Easther

Email Address



Q2

Are you making this submission on behalf of a business or organisation?

Yes (Please tell us your company/organisation):
COSPAR National Committee

Page 4: New Zealand's interests in space

Q7

What are your interests and relationship to space? Pick as many as apply below:

- General interest in space,**
- Work in the New Zealand space sector,**
- Have cultural connections to space,**
- Academic involvement on space issues,**

Other (please specify):

There is a range of scientific research activities which can only be performed from space. Nowhere in the above statement regarding New Zealand's interests in space is the acknowledgment of the intrinsic value of scientific discovery and the importance of Mātauranga Māori. The document is couched in terms of immediate economic benefit. Countries collectively rise higher and aim for greater things when space is accessed for civilian aims and scientific exploration, and this should be made explicit in the Policy.

Q8

Please note any other interests and relationship to space below that you would like to share.

There is a range of scientific research activities which can only be performed from space. Nowhere in the above statement regarding New Zealand's interests in space is the acknowledgment of the intrinsic value of scientific discovery and the importance of Mātauranga Māori. The document is couched in terms of immediate economic benefit. Countries collectively rise higher and aim for greater things when space is accessed for civilian aims and scientific exploration, and this should be made explicit in the Policy.

Page 5: New Zealand's values in space

Q9

Respondent skipped this question

To what extent do you agree or disagree that these values should apply to New Zealand's space activities and engagements?

Q10

Are there any other values, or aspects of kaitiakitanga (guardianship), that you think should apply to New Zealand's space activities and engagements? For example, cultural values regarding space.

Kaitiakitanga plays an important role in our approach to space, Māori view space as a taonga and respect and care is needed when considering activities in space. It is essential however that when concepts such as kaitiakitanga are cited as a foundation for policy that their fundamental philosophical underpinnings are well understood. Māori cultural values in decision making need to be included and Māori need to be at the table in decision making.

We note that sooner or later hard choices may be required to uphold our values. At present, many of our "red lines" (e.g., the deployment of nuclear weapons) are largely ceremonial, in that they are clear statements of principle but relate to situations that are unlikely to arise in practice.

There is likely to be real geopolitical contention when it comes to often apparently benign uses of space. These include the impact of satellite constellations or solar power from orbit on the shared experience of the night sky (a taonga as part of the natural environment, and which also has value to the tourist industry), the management of human impact on solar system bodies including in-situ resource utilisation, or in the aspect of planetary defence that involves the repositioning of any hazardous asteroids that may be identified in the future.

While we hope to bring about positive outcomes by persuasion and example, there may well be moments where we need to put our values ahead of the financial interests of key actors. At present we are not well-prepared for these conversations and eventualities.

There is little recognition of planetary protection in the proposed Policy. New Zealand participates in mission development and launch to the inner solar system, and will potentially participate in the Artemis Program. We should make a strong commitment to following the internationally agreed COSPAR protocols for planetary protection in our activities, and to playing a role in development of new planetary protection regimes as these are needed in the future.

The role of New Zealand in managing and supporting awareness of natural hazards from the space environment should be made more explicit. While space weather assessment and concerns are under the responsibility of DPMC due to its significance for national infrastructure, it should be made explicit that this is the case, as space weather is only mentioned in passing as 'outside anyone's control' in the Policy. Similarly, planetary defence (in regard to threats to the Earth from small Solar System bodies) is absent from the Policy; here, the Governmental responsibility chain and its approach should be articulated and made explicit.

Finally, the document notes that New Zealand is a signatory to UNOOSA. More emphasis could be given to this agreement in the policy.

Page 6: New Zealand's space policy objectives

Q11

Respondent skipped this question

Rank these key policy objectives in order of importance to you: Click and drag to reorder the objectives from 1 (most important) to 5 (least important)

Page 7: Growing an innovative and inclusive space sector

Q12

Respondent skipped this question

To what extent do you agree or disagree that these policy objectives will help the New Zealand government to grow an innovative and inclusive space sector?

Q13

Do you have any comments on these policy objectives? (e.g. any suggested change to how they are framed? Is there anything missing?)

We advocate for a stronger, more specific education component to be explicitly articulated in this section – from primary schools through to internships, graduate, and postgraduate study – to develop the expertise needed to support Aotearoa's growing space industry. A comprehensive educational strategy is needed to encourage the engagement of rangatahi / young people throughout the country, with an emphasis on outreach to Māori and Pasifika students. This effort should start now, so that we will have many qualified people in the “pipeline” in the coming decades, and those in the pipeline represent the diversity of Aotearoa/New Zealand.

Q14

Are there any other policy objectives that you think would help the New Zealand government to grow an innovative and inclusive space sector?

This should include for pure scientific inquiry in space as a key plank of our approach to space (as noted above). This is distinct from objectives that in many places in the document implicitly conflate technology development and innovation with scientific discovery.

In particular, New Zealand's relationship with space is currently unusual and unlikely to be genuinely sustainable, in the sense of our having exceptional capabilities in a highly dynamic technological field. Even if we do successfully build on this position, early-mover advantages tend to erode with time. Moreover, there is a tacit assumption in the document that space-related activities have an intrinsic glamour that will durably focus attention on the field in the long term – it is hard to imagine that this will dissipate completely, but as space becomes normalised, this advantage is likely to diminish. Successful space nations robustly address these concerns by ensuring that they are always expanding frontiers: often with long term missions and programmes that focus on discovery, and offer immediate and well-grounded opportunities for engagement. Engaging with space needs ongoing investment to stay at the frontier, in ways that extend beyond commercial ventures.

Q15

Do you have any questions or comments about what these objectives would mean in practice?

At present, New Zealand has no genuinely ground-breaking, publicly backed, inspirational efforts in its national portfolio – a commitment to developing a roadmap to ensure that the country is active at the “imagination frontier” will be critical to the long-term health of the sector.

Moreover, for both pragmatic and strategic reasons, our international partnerships will provide critical support for this endeavour, both in magnifying the impact of our work and in building local capability.

Page 8: Promoting the responsible uses of space internationally

Q16

Respondent skipped this question

To what extent do you agree or disagree that these policy objectives will help the New Zealand government to promote the responsible uses of space internationally?

Q17

Do you have any comments on these policy objectives (e.g. any suggested change to how they are framed? Is there anything missing?)

We suggest adding a “tidy kiwi” objective that reflects our responsibility to actively reduce and mitigate impact from space activities. This is a more active role than is currently captured under the phrasing “adopt responsible and sustainable practices”.

Q18

Are there any other policy objectives that you think would help the New Zealand government to promote the responsible uses of space internationally?

There is no recognition in the policy objectives which reflect that – in particular – Earth’s orbital space is a finite natural environment. Use of this natural environment can lead to degradation of this resource. Harm is caused to other space actors through the interference or restriction of access to space as a commons. Harm is also caused to non-space faring actors through the degradation of the natural dark and quiet sky, and is caused without consultation or recourse to remedy. While the increase in night glow is an issue that has far-reaching impacts, it will disproportionately impact Indigenous peoples’ access to the night sky. For New Zealand to be viewed as a responsible actor in space, some recognition of the finite resource that is the near-Earth environment should be included in its policies.

Q19

Respondent skipped this question

Do you have any questions or comments about what these objectives would mean in practice?

Page 9: Protecting and advancing our national security and economic interests

Q20

Respondent skipped this question

To what extent do you agree or disagree that these policy objectives will help the New Zealand government to protect and advance our national security and economic interests?

Q21

Do you have any comments on these policy objectives (e.g. any suggested change to how they are framed? Is there anything missing?)

We advocate that education and training should be emphasised in these objectives, from information technology/cybersecurity to environmental monitoring and assessment. With regards to economic interests, plans to protect domestic intellectual property should be acknowledged and included in establishing policy objectives to advance our national security and economic interests. In particular, the relatively blank canvas of the space industry represents both an obligation and an opportunity to support the economic interests of Māori.

As mentioned in our Question 3 response, there are several natural hazards in the space environment that affect the objectives of Section 3d. The interplay of these with the Policy and where they sit across broader governmental responsibilities should be clarified within the Policy; the current text seems to focus exclusively on a human/geopolitical perspective for security risks.

Thus, an Objective for 'Understand and manage natural hazards originating from space' etc. should be added. This is complementary with both 3c's Objective 3 and 3d's Objective 3, since international approaches for both space weather and planetary defence are inherently cooperative, as whole-of-planet problems that require global cooperation in order to address national interests.

Q22

Respondent skipped this question

Are there any other policy objectives that you think would help the New Zealand government to protect and advance our national security and economic interests?

Q23

Respondent skipped this question

Do you have any questions or comments about what these objectives would mean in practice?

Page 10: Modelling sustainable space and Earth environments

Q24

Respondent skipped this question

To what extent do you agree or disagree that these policy objectives will help the New Zealand government to model sustainable space and Earth environments?

Q25

Do you have any comments on these policy objectives (e.g. any suggested change to how they are framed? Is there anything missing?)

We appreciate that the Policy agrees that the space environment requires both sustainable interaction and management, which is a progressive position among similar policies internationally.

For the first Objective, inclusive collaboration by Maori and Pacific peoples may look differently than non-Maori collaborations. Consideration needs to be taken when different approaches are taken. Once again, Maori understandings on cultural values such as kaitiakitanga need to be correctly unpacked and understood — and this should be explicit within the Policy.

Māori now have the opportunity to rebuild and redevelop the relationship with the night sky and celestial bodies — however, owing to the international, national and local regulatory gaps surrounding outer space and light pollution, this opportunity is at risk of being lost. The speed in which technologies and the commercialisation of outer space is occurring has resulted in several issues that could benefit from greater policy discussion and mana whenua input. It is imperative there is meaningful partnership with Māori in the drafting of Aotearoa | New Zealand's space policy and legislation, as well as a strong Māori presence on any delegations or representations on international initiatives on outer space kaupapa. For Objective 3, we suggest that the Policy explicitly ties Objective 3 above to the UN 2030 wording and scope. The current text gives specific examples that are unbalanced across the portfolio of necessary topics, and omits the scope for research leadership to take place, e.g. within the coupled horizons of the Aerospace Strategy.

For Objectives 3 and 4, with respect to sustainability challenges, some details around these challenges and our abilities to meet these challenges should be outlined. For example, we might fly these missions ourselves, or get the data from international collaborations. We need more detail as to how these decisions would work, and how competing goals would be prioritised, assessed, and funded. For example, NASA organises decadal planning documents and puts out regular calls for mission proposals. Furthermore, these objectives strongly tie into developing a long-term education pipeline and the need for allied school programmes and public outreach and engagement.

Q26

Are there any other policy objectives that you think would help the New Zealand government to model sustainable space and Earth environments?

These policy Objectives appear limited in this part of the wording to considering the Earth environment; as distinct from the environment in Earth orbit, or indeed cislunar space, and environments further afield in interplanetary space. An Objective is needed to reflect that space activities degrade these environments. We also need to be cognisant of how our presence in outer space influences how we engage with the night sky from Earth, and any negative impacts that may disproportionately affect Indigenous peoples.

Q27

Do you have any questions or comments about what these objectives would mean in practice?

Objective 4 will need investing in 'retain, grow, access, use' — and also to report on — sustainable space technologies. Without a framework for monitoring and assessment of compliance, the assessment highlighted in Objective 2 will not be possible.

Page 11: Regulating to ensure space activities are safe and secure

Q28

Respondent skipped this question

To what extent do you agree or disagree that these policy objectives will help the New Zealand government to promote the responsible uses of space internationally?

Q29

Respondent skipped this question

Do you have any comments on these policy objectives (e.g. any suggested change to how they are framed? Is there anything missing?)

Q30

Respondent skipped this question

Are there any other policy objectives that you think would help the New Zealand government to ensure space activities are safe and secure?

Q31

Respondent skipped this question

Do you have any questions or comments about what these objectives would mean in practice?

Page 12: Regulating in line with our national interests

Q32

Are there any comments you would like to make about these criteria that inform consideration of the national interest?

The language relating to sustainability is couched in terms preserving the future use of space for space activities. It does not reflect that the use of the effectively finite resource of space almost always results in a degradation of that finite resource. There should be language that reflects that our use of space must be balanced against the impact it causes. The phrasing around 'intended end use' implies that accidental harm to the environment will be authorised, if it is known about (e.g. in the peer-reviewed literature), but it is not part of the 'intended end use' case. This is incompatible with the wording in the above principles, and of the Objectives in Section 3b. The two sections should be reconciled.

Q33

What questions do you have about how the national interest is considered in practice?

As a specific example, the launch of Gunsmoke-J raised concerns about the limits of our regulatory tolerance. Minister Nash admitted that he was "unaware of [its] specific military capabilities". How will we avoid similar circumstances in the future?
