NEW ZEALAND
FOREIGN AFFAIRS & TRADE
Manatū Aorere

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Norms, Rules and Principles of Responsible Behaviours in Space

New Zealand contribution

1. New Zealand is strongly committed to the peaceful, safe, stable, secure and sustainable use of outer space and to reducing space threats through rules, norms and principles of responsible behaviours, based on the UN General Assembly resolution 75/36. New Zealand also strongly supports the objective of preventing an arms race in outer space.

2. Resolution 75/36 encourages Member States to study threats and security risks to space systems and to share their ideas on the further development of responsible behaviours in space with the Secretary-General, who will submit a substantive report to the upcoming UN General Assembly. We welcome the opportunity through this submission to contribute to the ongoing discussion, and encourage all states to take note of the Secretary-General's future report, as requested in the Resolution.

Space Matters

3. As a launching state, open and equitable access to space for all is critical to New Zealand's participation in space. Dependence on space-based technology by *all states*, however, requires active collective engagement on an issue increasingly becoming a core interest of all countries: responsible behaviour in outer space.

4. In the 21st century, all countries have a strong national and collective interest in ensuring the safe, responsible and peaceful use of outer space. The international community relies on space-based systems to provide crucial services ranging from navigation to banking, weather monitoring and telecommunications, as well as important defence and security capabilities. In addition, New Zealand is cognisant of the scientific and other potential benefits that outer space carries, and the need to preserve the integrity and sustainability of the outer space environment.

5. Access to space also plays a role in achieving the 2030 Sustainable Development Goals. Space-based systems provide information to enable sustainable use of natural resources, agricultural monitoring and delivery of education and health care to isolated regions, and humanitarian aid to disaster stricken areas. Space assets can provide early warning of natural disasters and improve responses in the aftermath of disasters and emergencies.

6. It is therefore in our collective interest, as Member States, to ensure the safe and secure access to and use of space, and a space environment that is sustainable, peaceful, and free from conflict.

7. This submission focuses on behaviours that could be perceived as threats by space actors. New Zealand notes separate but complementary work under way in the UN Committee on the Peaceful Uses of Outer Space (COPUOS), including the work on the long term sustainability of space.

High Level Principles

8. New Zealand believes a transparent, representative, and multilateral approach is critical to addressing issues of responsible and irresponsible behaviour in outer space. Additionally, New Zealand encourages all states that have not already done so to sign and ratify the *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space,*

including the Moon and Other Celestial Bodies (the Outer Space Treaty or OST) and to participate actively in the Committee on the Peaceful Uses of Outer Space.

9. All states' behaviour in and related to outer space occurs, and must be examined within the framework of existing binding international law, including the Outer Space Treaty, and the United Nations Charter. Binding international rules – as found in treaties and customary international law – provide the foundation for regulation of behaviour in the space domain, including in the peaceful use and exploration of outer space.

10. The Outer Space Treaty provides the core international regulatory framework for all activities in outer space and has various obligations. These include: that the Moon and other celestial bodies be used exclusively for peaceful purposes; that all activities in outer space should be conducted for the benefit and interests of all countries; that States Parties must conduct all activities in outer space with due regard to the interests of other states parties; and that States Parties undertake appropriate international consultations in advance of any planned activities that would cause potentially harmful interference with other states parties' activities. However, there is a need for multilateral processes to progress rules, norms and standards that effectively operationalise these core obligations, and to develop and articulate responsible behaviours in space.

11. To work towards collective agreement and understanding on such rules, norms, and standards, states must be able to identify and agree responsible and irresponsible behaviours in outer space, and the reasons for their categorisation. New Zealand considers it important that these discussions be conducted transparently and inclusively, with all relevant stakeholders, including commercial operators, scientists, civil society, academics, and think-tanks. We are pleased that a number of such stakeholders have contributed to these discussions already, and consider it important that expertise from all relevant areas is heard.

12. This submission outlines, from New Zealand's perspective, emerging challenges and irresponsible behaviours related to state activity in space, and offers a contribution to the international discussion on how these challenges and behaviours should be addressed.

Modern space threats and risks

13. As benefits flowing from space increase, there is growing competition amongst space actors to accrue those benefits, and growing evidence of irresponsible state behaviour in space designed to place select space systems at risk.

14. It is clear that the greater competition brings with it challenges to the sustainable and peaceful use of outer space. Disruption to space-based systems could have severe, and far-reaching consequences on Earth. Further, the rapid increase in the number of state and non-state actors in space raises the risk of misunderstandings or miscalculations that may have severe consequences on states and their populations.

15. Below we set out some of the key space 'threats' that we foresee could present the greatest challenges to the peaceful, safe, and sustainable use of outer space. The following behaviours risk destabilising the space environment, and could potentially pose significant risks of miscalculation and escalation leading to conflict in, or extending conflict to, outer space:

15.1. Anti-satellite (ASAT) missile testing;

15.2. Non-transparent satellite rendezvous and proximity operations;[1]

15.3. Irregular satellite movement in geostationary orbit.[2]

16. In addition, in considering New Zealand's approach to responsible and irresponsible behaviour in outer space, we are cognisant of the effects of other phenomena that could further complicate the navigability, usability, and sustainability of the space domain and must be considered in further discussions. Primarily, the crowding of the orbital environment, particularly certain regions of Low Earth Orbit (LEO), increases the risk of in-orbit collisions between debris and active satellites, between pieces of debris, or between active satellites. This reduces the usability of outer space for all countries and erodes the sustainability of space.

Behaviour-based approach

17. The inherently multi-use nature of space technology presents challenges to the development of rules, norms and standards in that potentially productive, positive activities should not be prohibited. Additionally, there are significant complexities to verification in the space environment. As a result, rather than placing limits on the deployment of specific technologies in the space domain, the international community would benefit from a focus on the intent behind such deployment, including the intended as well as unintended (but possible) consequences of such deployment. Agreeing on norms, rules and standards of responsible behaviour is a pragmatic, action-oriented first step.

18. There are other areas where a behaviour based approach has been adopted. For example, the report of the 2015 Group of Governmental Experts on Developments in the Field of Information and Telecommunications in the Context of International Security noted that "voluntary, non-binding standards of responsible State behaviour can help reduce the risks to international peace, security and stability". Below, New Zealand provides some initial thoughts on such behaviours in the space environment.

Responsible Behaviours

19. **Transparency** must be central to all countries' approaches to activities in outer space. We encourage all states to proactively notify the international community of launches and to register space objects in a timely manner, consistently with international obligations under the Convention on Registration of Objects Launched into Outer Space (Registration Convention) and associated requirements. Additionally, countries should share national policies and space strategies publicly to ensure one another's intentions are clear and well understood.

20. More generally, **communications** need to be at the heart of our approach to managing threats and risks in space. The Outer Space Treaty requires communication and consultation regarding

[1]Rendezvous and Proximity Operations (RPO) are the procedures and satellite manoeuvres required to bring two or more satellites into close coplanar proximity. While RPO is expected to become routine for a range of activities, such as to maintain, extend the life of or modify satellites for legitimate purposes, RPO can also be used for on-orbit anti-satellite systems.

[2] Objects in geostationary orbit possess an orbit equal to Earth's rotation and appear near motionless when observed from the ground. Although some minor manoeuvring occurs in-place, it is irregular for satellites to move around the orbit.

potentially harmful interference, but enhanced communication more broadly will build trust among space actors and reduce the risks posed by misunderstanding. Communication of an intention prior to an activity occurring creates predictability, and opportunities for feedback or risk notification. We suggest that states re-examine the transparency and confidence building measures (TCBM) articulated in the recommendations of the 2013 Report of the Group of Governmental Exports on TCBMs in Outer Space Activities. These provide a solid platform, and New Zealand supports making better use of these and strengthening existing regimes, forums and instruments to promote a peaceful, safe, stable and sustainable space environment.

21. We also consider that responsible space behaviour must involve **avoiding creation of space debris**. States should not intentionally or knowingly support the creation of debris, and this consequence should be considered in depth when undertaking space launches, releasing payloads into orbit, or conducting any orbital activities.

22. New Zealand recommends the international community continue to work on developing **space situational awareness**. The ability to incorporate data from a variety of sources should enhance understanding of what is happening in space and so ensure that all stakeholders have a more complete picture of the operating environment. This should build trust and confidence amongst space operators and states, as it allows states to monitor 'normal' patterns of behaviour and recognise and attribute deviations that may be perceived as irresponsible.

23. The **expected proliferation of counter-space capabilities** is increasing risks of denial of access to space systems. Denial of access via jamming, spoofing[3], and hacking is becoming easier, more advanced and more frequent. Physical counter-space capabilities such as ground-based lasers are harder to acquire but could have catastrophic effects. These effects include irreversible loss of space assets and damage to other assets through the creation of space debris. We recommend the international community develop norms of behaviour to address these threats.

24. New Zealand highlights our significant concern about **anti-satellite capabilities**. These capabilities will create instability between adversaries with the potential for conflict to spill over to terrestrial domains. They also threaten the sustainability of outer space with the creation of space debris, introducing significant, needless risk to other space-based infrastructure. It is difficult to conceive that such capabilities could be deployed and used in line with taking a responsible, peaceful approach to the use of outer space.

25. **Rendezvous or proximity operations** are an emerging feature of space activity but pose particular challenges to the security environment. Proximity or rendezvous operations which manifest as hostile manoeuvring may increase the likelihood of miscalculation or misunderstanding. They could prompt threatening responses (whether terrestrial or in outer space), and have unforeseen and unintended third order consequences for other space objects and civilian infrastructure. Norms of behaviour need to be agreed to govern such activity.

Next steps

26. New Zealand views it as critical that the international community works together to effectively operationalise the international rules applying to outer space. We should develop and articulate

[3] Spoofing is the creation of false signals (or radar targets) in order to deceive, distract or confuse a system.

responsible behaviours in order to ensure that outer space continues to be safe, peaceful, and sustainable for all.

27. For the reasons outlined above, we see a behaviour-based approach as the most pragmatic approach at this stage, though we remain open to learning from the expertise and hearing the views of all appropriate stakeholders in this area. States must increase the transparency and predictability of space activities, build trust and confidence and reduce the risks of misperceptions and miscalculation. A framework for responsible behaviour can help to achieve this which may, in turn, pave the way for a treaty-type instrument in due course.

28. The views in this submission should be viewed simply as an initial contribution. We look forward to examining and understanding others' views to understand the challenges at hand, and identify norms or principles that will address these challenges.

29. Collective efforts regarding responsible behaviours must be inclusive and aimed at:

    29.1. Reaching a deeper common understanding of space threats and risks;

    29.2. Developing a shared understanding among states about what types of behaviour are responsible or irresponsible

    29.3. Elaborating transparency and confidence building measures in parallel to the development of a framework of responsible behaviour, as these will support the development and implementation of such a framework.

30. New Zealand is open to views as to the modalities to take this work forward. What is important is that the conversation continues, not where it occurs. Nonetheless, New Zealand sees great merit in establishing a Group of Governmental Experts or an Open Ended Working Group to consider these issues. Either would enable much needed exchange of views and discussion of threats to the security of outer space alongside elaborating principles for responsible behaviour in a practical and constructive matter.

31. Given that all countries in the 21st century have a strong national and collective interest in ensuring the safe, sustainable, responsible and peaceful use of outer space, New Zealand looks forward to working with you all to safeguard the continued peaceful and sustainable use of outer space now and in the future.

ENDS