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**Re: Comments on Public Consultation Discussion Paper *Licensing for the Provision of Non-geostationary Orbit (LEO/MEO) Satellite Services in PNG***

Kuiper Systems LLC (“Kuiper”), a wholly owned subsidiary of Amazon.com Services LLC (together, “Amazon”), respectfully submits these comments in response to the Public Consultation released by NICTA on the Discussion Paper *Licensing for the Provision of Non-geostationary Orbit (LEO/MEO) Satellite Services in PNG* (“Discussion Paper”). As explained below, Amazon encourages NICTA to adopt a light touch, flexible licensing regime and a policy framework that eliminates barriers to entry, as well as spectrum access and sharing rules that are consistent with the ITU Radio Regulations, to facilitate the deployment of non-geostationary satellite orbit (“NGSO”) satellite services for the benefit of customers and the broader digital economy in Papua New Guinea (“PNG”).

**I. Background**

Amazon’s mission is to be Earth’s most customer-centric company, and Project Kuiper is one of our ambitious projects to fulfill this mission. Project Kuiper is an initiative to increase global broadband access through a constellation of up to 3,236 NGSO fixed-satellite service (“FSS”) satellites in low Earth orbit (“LEO”) that will provide high capacity, high-speed, low-latency broadband services to unserved and underserved communities around the world, including in PNG.

There are billions of people around the world who lack access to reliable broadband. Project Kuiper will help bridge this gap by delivering fast, affordable broadband to places beyond the reach of traditional fiber or wireless networks. It is inspired by customers in every corner of the world: by families working and learning together from home; by scientists and researchers operating in remote locations; by first responders providing disaster relief; and by companies of all sizes moving their business online. Project Kuiper will serve individual households, as well as schools, hospitals, businesses and other organizations operating in places without reliable broadband, including in rural and hard-to-reach places in the country.

**II. Comments on the Discussion Paper**

Amazon applauds NICTA’s initiative to review the licensing for LEO systems separately and in advance of the main review of the Operator Licensing Regulation, 2011. Clarifying and updating the licensing framework to create an enabling environment for NGSO FSS satellite systems will facilitate the delivery of the benefits that these innovative technologies offer to communities and businesses in PNG.



Satellite communications play a critical role in enabling connectivity, providing services to rural and remote populations, helping terrestrial mobile operators to extend the reach of their mobile networks, and rapidly establishing or restoring communications in cases of emergency and disaster relief. In particular, NGSO FSS satellite systems provide coverage that accelerates the ability of satellite operators and services providers to offer broadband connectivity in areas not served by fiber optic cable or terrestrial networks, expanding the availability of broadband services throughout.<sup>1</sup>

Flexible, light-touch licensing mechanisms and regulation, as well as a policy framework that eliminates barriers to entry, will facilitate diverse and broader participation of NGSO FSS systems in PNG, increasing competition, affordability, and customer choice for broadband services. Blanket licensing of, and license exemptions for, customer terminals are both examples of flexible, simplified licensing mechanisms that can accelerate the ability of such systems to offer much needed connectivity.

The successful deployment of customer terminals benefits from national rules and regulations that are appropriate to the deployment of new satellite communications technologies and systems like Project Kuiper. Blanket licensing of customer terminals reduces the cost and administrative burden in connection with the authorization of these terminals. This approach has been implemented in many countries around the world,<sup>2</sup> and benefits both satellite network operators and service providers who use satellite connectivity for connecting their networks. Customers also benefit from blanket licensing of customer terminals, as they have access to a greater choice of cost-effective and reliable broadband connectivity options to meet their needs. Such an approach also reduces unnecessary administrative and regulatory burden on government agencies, as a flexible regulatory framework enables business flexibility and allows operators to provide broadband internet connectivity services with minimal registration and administrative requirements.

Clear and straightforward spectrum access rules and regulations are essential to support new entrants, and create an environment capable of accommodating multiple services that benefits the interests of customers in the country. Amazon respectfully submits that NICTA should ensure that existing ITU frequency allocations to satellite services are maintained and respected, and that the spectrum-sharing rules of the ITU and related ITU Recommendations and studies are observed. Allowing access to sufficient spectrum for satellite services, and allowing satellite broadband systems to operate without harmful

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<sup>1</sup> See, Asian Development Bank (ADB), *Digital Connectivity and Low Earth Orbit Satellite Constellations: Opportunities for Asia and the Pacific* (April 2021), available at <https://www.adb.org/publications/digital-connectivity-low-earth-orbit-satellite-opportunities#:~:text=and%20the%20Pacific-Digital%20Connectivity%20and%20Low%20Earth%20Orbit%20Satellite%20Constellations,for%20Asia%20and%20the%20Pacific&text=This%20publication%20explores%20the%20potential,particularly%20its%20more%20remote%20areas>. In this report, the ADB recognizes that satellite broadband “is poised to become an even more important technology for addressing the growing digital divide”, and provides Recommendations that Member Countries can adopt to leverage the opportunities presented by LEO systems.

<sup>2</sup> In Europe, the Electronic Communications Committee (“ECC”) has issued ECC Decision (05)01 (<https://docdb.cept.org/download/2856>) which sets up an exemption from individual licensing and allows the free circulation and use of uncoordinated FSS earth stations operating in specified bands, in accordance with technical and operational requirements stated in Annex 2 of that Decision. Similarly, the U.S. Federal Communications Commission’s (“FCC”) has rules that allow blanket licenses of FSS earth stations in specific frequency bands (see Section 25.115(f) of Title 47 of the Code of Federal Regulations, [https://www.ecfr.gov/current/title-47/chapter-I/subchapter-B/part-25#p-25.115\(f\)](https://www.ecfr.gov/current/title-47/chapter-I/subchapter-B/part-25#p-25.115(f))).



interference from other authorized services, enables satellite operators and service providers to provide higher quality connectivity services to consumers.

Amazon further encourages NICTA to adopt simplified and flexible licensing mechanisms that reflect the international nature of NGSO FSS systems, and to create a regulatory environment which enables these systems to operate to their full potential.<sup>3</sup> Limitations on foreign investment or burdensome application requirements, obligations, and fees under national regulatory and Universal Service schemes, only serve to increase barriers for operators to provide much needed connectivity services. Likewise, constraining NGSO FSS satellite services to certain areas or geographies in the country would be inconsistent with the national coverage satellite constellations inherently offer.

In addition to serving unconnected or sparsely populated areas, NGSO FSS satellite systems can provide satellite-based broadband connectivity to help terrestrial mobile operators to extend the reach of their networks, and to provide redundancy / continuity services for all types of customers in the event of an emergency or natural disaster.<sup>4</sup> A flexible, light touch, and simplified regulatory framework for satellite services would allow NGSO systems to help connect even more people in more places, no matter how remote, and serve customers across PNG. It would also facilitate NICTA's goals to foster the benefits these systems can offer to consumers, public administration, and the economy in PNG.

Amazon thanks NICTA for the opportunity to comment on the Discussion Paper. We look forward to expanding broadband access and increase customer choice for more households and businesses in PNG, and welcome the opportunity to discuss with NICTA these comments or any other issues of interest in this submission.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Gonzalo de Dios". The signature is fluid and cursive, with a large loop at the end.

Gonzalo de Dios  
Head of Global Licensing  
Project Kuiper  
*On behalf of Kuiper Systems LLC*

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<sup>3</sup> Satellite operators draw on the natural benefits their coverage offers to build communication networks that are regional or global and, by doing so, support socioeconomic development around the world. See, Global Satellite Operators Association (GSOA), *Market Access for Satellite Communications*, available at <https://gsoasatellite.com/wp-content/uploads/2017-10-Market-Access-for-Satellite-Communications.pdf>.

<sup>4</sup> See, e.g., Here's how Project Kuiper's satellite network can help telecom partners like Vodafone and Vodacom enhance reliability and extend reach, available at <https://www.aboutamazon.com/news/innovation-at-amazon/how-kuiper-extends-cell-and-internet-service>.