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Inquiry Secretary
Joint Standing Committee on the National Capital and External Territories
Department of the House of Representatives
PO Box 6021
R1.121 Parliament House
Canberra ACT 2600
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27 January 2021

Inquiry into the availability and access to enabling communications infrastructure in Australia's external territories

Dear Sir,

SES S.A., on behalf of its Australian subsidiaries New Skies Satellites Australia Pty Ltd and O3b Teleports (Australia) Pty Ltd (together, "SES"), is pleased to submit its comments to the Joint Standing Committee on the National Capital and External Territories' inquiry into and report on the availability and access to enabling communications infrastructure in Australia's external territories. SES is a global satellite operator that operates a fleet of 50 satellites in geostationary orbit ("GEO"), as well as the innovative O3b constellation of High Throughput Satellites ("HTS") in medium Earth orbit ("MEO").

SES supports the Committee's examination of the current communications situation in Australia's external territories of Norfolk Island, Christmas Island and the Cocos (Keeling) Islands. And, in accordance with the Committee's terms of reference, notes the focus on activities to enhance connectivity and services, and the options and opportunities for improving availability of and access to communications infrastructure.

The availability of, and access to communications technologies and infrastructure in each of the external territories

SES's O3b constellation of 20 satellites located in MEO has been in operation since 2014. This network of MEO satellites is supported by gateways located at sites in Dubbo (NSW) and Gngangara (WA), providing a wide range of satellite connectivity solutions in Australia and throughout the region.



O3b's satellite capacity is offered as a "middle mile" carriage service to other licensed carriers including: telecommunications operators, mobile licensees (for backhaul to support 2G, 3G, and 4G-LTE service), government agencies (such as for rural broadband deployment and border security), large enterprises (such as mining, and gas exploration) and for connectivity at sea. O3b Australia's customers may wish to originate, terminate, or both originate and terminate communications in Australia.

Today, the O3b constellation provides high-bandwidth, low-latency connectivity to Christmas Island and Norfolk Island, which has enabled broadband and 4G/LTE deployment, as well as a variety of e-learning and e-health applications.¹ In this regard, SES offers unmatched satellite services to customers in Australia's external territories relying on the O3b MEO satellite system, with unique capabilities of low latency, high throughput, steerable capacity, in-built satellite redundancy in the constellation and affordability. The O3b system can therefore deliver fibre-like connectivity anywhere in the country so that Australia's citizens can enjoy quality data and voice services, even in areas that are difficult to serve, underserved or unserved by terrestrial telecommunications infrastructure. O3b is proud to have been providing such services to the external territories of Christmas Island and Norfolk Island for the last half decade.

In addition, SES operates a number of satellites in GEO that provide coverage of Australia's external territories, including the NSS-12, NSS-9, SES-7, SES-9 and recently launched SES-12 HTS system. These satellites and associated ground infrastructure, including gateways in South Australia and Western Australia, are well placed to support a wide variety of Fixed Satellite Service applications in Australia's external territories, offering universal access, cellular backhaul, aeronautical and maritime services.

Future opportunities in enabling communications technologies and infrastructure in each of the external territories including telecommunications services, submarine cables, satellite capabilities

Predicated on evolving traffic patterns and insight to changes in the market, SES is adapting its services to meet future needs by employing advanced payload capabilities. SES's next-generation MEO system - O3b mPOWER - scheduled for launch in 2021, will provide even

¹ For Christmas Island, see Speedcast, *Broadband on Christmas Island*, Annexure B (indicating use of O3b and LTE small cell and WiFi technologies to deliver broadband), at <https://www.speedcast.com/broadband-on-christmas-island/> (last visited Jan. 27, 2021); Developing Telecoms, *SpeedCast Signs Trunking Contract with O3b Networks for Christmas Island* (Jun. 15, 2015), at <https://www.developingtelecoms.com/tech/networks-infrastructure/satellite-networks/5863-speedcast-signs-trunking-contract-with-o3b-networks-for-christmas-island.html> (last visited Jan. 27, 2021). For Norfolk Island, see Via Satellite, *O3b to Provide Improved Connectivity to Norfolk Telecom Customers* (Apr. 9, 2014), at <https://www.satellitetoday.com/telecom/2014/04/09/o3b-to-provide-improved-connectivity-to-norfolk-telecom-customers/> (last visited Jan. 27, 2021); Criticalcomms, *4G network funded for Norfolk Island* (Jul. 16, 2018), at <https://www.criticalcomms.com.au/content/radio-systems/news/4g-network-funded-for-norfolk-island-589342817#axzz6kjs8Wjx> (last visited Jan. 27, 2021).



higher throughput and flexibility. These seven (7) next-generation O3b mPOWER satellites will be supported by gateways located at sites in Dubbo (NSW)² and Merredin (WA).

In this regard, customers and their end users increasingly need to connect to the very edge of the global network, in locations where terrestrial communications infrastructure is poor or non-existent, or where it is economically infeasible. The demand for edge compute capability is on the rise. While most computing tasks are carried out at a centralised location in the cloud, some compute capability is required at the network edge to support low-latency applications and minimise congestion in aggregated networks. To meet these new requirements, amongst others, SES has created the O3b mPOWER system. The flexibility of O3b mPOWER, combined with its wide coverage and enhanced capacity, enables customers reach new markets, deliver more value, and better serve their end users.

O3b mPOWER gives customers the flexibility to offer dedicated capacity packages in addition to shared bandwidth. The system has the capability to serve customers with both small and large bandwidth requirements, and change the available capacity over time as customer needs evolve. It also makes it much easier to construct end-to-end managed network solutions, serving customers who wish to buy a complete connectivity package in the same way they would purchase network services from a purely terrestrial provider. With O3b mPOWER, the outer endpoints of these managed networks can also be located in the most inaccessible places.

Recommendations for any future communications technologies and infrastructure for each of the external territories

Both GEO and MEO HTS systems will play a key role in creating a more inclusive digital society by connecting the unconnected and extending the reach of mobile networks (including 5G networks) to areas that would otherwise not be reached.³ Satellites will help ensure ubiquitous broadband, support broadcast/multicast to the network edge, and enable aeronautical and maritime communications. In addition, satellite systems are expected to play a vital role in the Machine-to-Machine ("M2M") / Internet of Things ("IoT") and cloud services to support agriculture, mining, transportation and logistics sectors, thereby enabling digitisation and visibility across the global support chain – even in places where terrestrial infrastructure is limited.

Conclusion

SES recognises, as stated by the Committee Chair, Dr Anne Webster, MP, that "the remoteness of Australia's external territories makes providing communications infrastructure,

² See: Enhanced regional connectivity with new satellite ground station in Dubbo, NSW, <https://www.ses.com/press-release/enhanced-regional-connectivity-new-satellite-ground-station-dubbo-nsw>

³ See European Communications Committee ("ECC") Report 280, Satellite Solutions for 5G (2018), <https://docdb.cept.org/download/e1f5f839-ba17/ECCRep280.pdf>; EMEA Satellite Operators Association ("ESOA") presented "Satellite in the 5G Ecosystem" [https://www.itu.int/en/ITU-D/Regulatory-Market/Documents/Events2019/Togo/5G-Ws/Ses3 ESOA GSC.pdf](https://www.itu.int/en/ITU-D/Regulatory-Market/Documents/Events2019/Togo/5G-Ws/Ses3%20ESOA%20GSC.pdf).



technology and services particularly challenging, while at the same time even more important to the daily lives of residents.”⁴ In this regard, broadband connectivity can be delivered cost-effectively via satellites in GEO and MEO. As a major global provider of GEO satellite services, and the operator of the world’s only MEO satellite telecommunications constellation, SES has been connecting Australia’s external territories for years and stands ready to help meet their connectivity needs of the future.

Please contact the undersigned if you have any questions about this letter and SES looks forward to continued engagement with the Committee.

Yours Sincerely,

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⁴ See Committee to examine communications in territories,
https://www.aph.gov.au/About_Parliament/House_of_Representatives/About_the_House_News/Media_Releases/Committee_to_examine_communications_in_territories