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The Manager  
Spectrum Engineering and Space Section  
Spectrum Planning and Engineering Branch  
Australian Communications and Media Authority  
PO Box 78  
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Submitted online

**Re: Response to implementation of the Spectrum Pricing Review - consultation 39/2020**

Intelsat, the leading provider of Fixed Satellite Services (“FSS”) worldwide,<sup>1</sup> commends the Australian Communications and Media Authority (“ACMA”) for acknowledging the importance of reducing taxes to promote the efficient use of spectrum. Intelsat welcomes the proposed amendments to reduce taxes on the use of spectrum for satellite services in all density areas, especially taking into account modern High Throughput Satellites (HTS) systems that need access to contiguous amounts of spectrum to make full use of their capabilities and deliver the best broadband experience to customers. A reasonable Australia-wide tax is therefore an imperative for a viable business case and we urge the ACMA to consider further revisions, as proposed herein.

**Reducing or Abolishing Taxes for High Density Areas (and Australia-wide)**

Intelsat supports ACMA’s proposal of adjusting taxes and reducing those at 50% for Ku band, in all density areas (and Australia-wide). However, the proposed high-density area tax is still very high. Intelsat understands that the area pricing system aims to encourage satellite ground operators to establish networks outside of high-density regions. However, ACMA should consider the arguments outlined below when establishing the fee framework for satellite services.

Firstly, satellite terminals are low-interference devices for terrestrial services. This is partly due to satellite network operators’ ability to use appropriate antenna pointing and protection management to significantly reduce interference to other primary services in the Ku band. Considering that the interference caused by satellite earth stations is low, treating satellite and terrestrial services similarly to high-interference equipment may not be justified given the impact on frequency

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<sup>1</sup> For the past 50 years, Intelsat has been delivering information and entertainment for many of the world’s leading media and network companies, multinational corporations, Internet Service Providers (“ISPs”) and governmental agencies, among many users. Among its different products, Intelsat provides high-performance connectivity to small antennas on demand, offering global coverage and 99% network availability. Many of Intelsat’s services are in the Ku band, which is of high importance to Intelsat for rolling out its services in Australia. Intelsat already has several space apparatus licenses in Australia for operation in the Ku band, and is considering applying for additional licenses.

monitoring required for satellite services and the ultimate regulatory cost in overseeing those activities.

Secondly, the current density-based taxation may not be appropriate for satellite networks comprised of Earth Stations in Motion (ESIMs) or transportable earth stations. Both types of stations are flexible in nature and end users may use such stations across Australia. We believe that the concept of density-based taxation, which makes sense for gateway earth stations, needs rethinking when applied to moving earth stations such as aeronautical/maritime/land/ESIM, and requires at the minimum a suitable revision of the Australia-wide apparatus taxation. Therefore, the system would benefit from re-configuration, as this would better accommodate the application of ESIMs and transportable earth stations, while the simplification of this framework can provide transparency for operators deploying earth stations that move across areas of different density.

Thirdly, the current annual fee structure does not differentiate applicable taxes between earth stations under Apparatus or Space Licences, and applies to all types of earth stations, without consideration of whether earth station coordination is required or whether there is any interference to or from terrestrial services. The Ku band frequency range is used under the Radiocommunications (Communication with Space Object) Class Licence 2015<sup>2</sup> (“Class License”), which allows the operation of an unlimited number of earth stations – under an apparatus space license – without causing any interference to terrestrial services. The criteria used for the fee’s calculation is the density area and frequency range; but not type of technology and its impact on the use of spectrum. However, novel satellite technologies in Ku-band are envisaged to encompass large, flexible, and dynamic bandwidth uses and sites with multiple antennas without interfering with other services. We urge the ACMA to also consider new technologies in developing pricing criteria.

Finally, the current tax system does not consider situations when satellite network operators must use broad bandwidth because of the configuration of satellite systems, requiring use of the whole Ku band (or a substantial part thereof). For instance, Intelsat’s network may employ multiple different access schemes, which include dynamic return link channel sizing and transmit frequency selection. Based on traffic conditions and resource availability, earth stations may be able to transmit in the whole Ku band but by transmitting at a variable bandwidth, the earth stations will only utilize a small portion of the band at a time. However, if the operator only has a few earth stations throughout the country, this may become economically unfeasible due to high regulatory fees. Therefore, this may result in an operator paying USD 150 000 for being able to use Australian wide spectrum. As described below, several jurisdictions apply a principle that differentiates between the number of stations in the country, for a fairer to operators who want to enter the Australian market and need a large portion of the band but have only few customers.

In Intelsat’s view, the current tax system creates disincentives for the provision of satellite services. Instead, Intelsat respectfully suggests that the ACMA consider applying the same low fees for low density as well as high-density areas for satellite services or further reducing the high-

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<sup>2</sup> [Radiocommunications \(Communication with Space Object\) Class Licence 2015](#).

density area tax. In our opinion, given the nature of satellite services and emergence of new types of satellite ground technology, lowering tax rates further would:

- a) make licensing and compliance, including the collection of taxes, less complex.
- b) simplify operation of satellite networks, and avoid confusion as to whether an earth station shall be within a certain area or not; and
- c) open market access to various satellite providers who otherwise would be deterred from providing their services due to high taxes.

In the next section, Intelsat provides details below of the taxation systems utilized in other jurisdictions as reference for potential alternatives to the current system of density-based taxation. Intelsat argues that a low flat tax would be more appropriate for earth stations, especially if there is no frequency interference issue with other services. In addition, the cost of overseeing their activities is very low.

#### Taxes for the use of frequencies in other jurisdictions

The current Australian fee structure imposes very high fees for satellite services in comparison to other jurisdictions, affecting the competitiveness of Australia's space industry. Intelsat welcomes the Class License approach of the Australian framework where a Space License covers the operation of user terminals under a Class License. Nevertheless, the resulting fee is disproportionately high with respect to other jurisdictions that have a similar class license approach.<sup>3</sup>

In Europe, many CEPT member states have implemented ECC decisions<sup>4</sup> which exempt earth stations in the Ku band, under certain technical parameters, from individual licensing. These decisions assert that as long as: i) the operation of earth stations and use of spectrum adheres to the requirements of those decisions; ii) the efficient use of spectrum is not at risk; and iii) harmful interference is unlikely, the operation can take place under a blanket/network license by a network operator. Below are few examples from jurisdictions in Europe and elsewhere to demonstrate the benefits of the international approach.

#### **UK-based Model**

Under the UK framework, earth stations in certain Ku and Ka bands could be covered by the Satellite (earth station network) license, a blanket license for which operators pay a relatively modest flat-fixed annual license fee of GBP 200 (AUS 357) per one satellite network in Fixed Satellite Services (in GSO).<sup>5</sup>

#### **German-based Model**

The German telecommunication authority differentiates between a network (blanket) license, which is issued in the Ku or Ka bands to satellite network operators for an unlimited number of

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<sup>3</sup> Blanket License in the present has the meaning of a single License covering the operation of a number of stations sharing the same technical characteristics.

<sup>4</sup> For more information please see [ECC Decision \(18\)05](#), [ECC Decision \(06\)03](#) and [ECC Decision \(03\)04](#).

<sup>5</sup> [Fees for Satellite Earth Station licences](#).

stations, and approval for individual earth stations. The network license makes the process much more convenient from a licensing and tax perspective for satellite network operators to operate earth stations in the country.

### **Canada's ESIMs Model**

Canada's framework recognizes the efficiency in spectrum use of ESIMs and separately charges movable stations in the Ku band. Canada, while allowing blanket licensing, applies a fixed fee per Ku-band ESIM station.<sup>6</sup> However, the fee is fixed and relatively low allowing an economically feasible operation of a few terminals that use flexible and dynamic bandwidth within the whole Ku band. It should be noted that the area density is part of the criteria used in Canada to determine the fee structure for terrestrial services, but not for satellite services.

### **Japan-based Model**

On the other hand, Japan's fee structure is applied per earth station even in the case of a blanket license. However, the fee is relatively low, at an estimated USD 4 per station.

### **Italian-based Model**

A similar approach is taken in Italy, where a network license is available for the Ku and Ka bands; however, the regulatory fee is calculated per the number of stations as follows:<sup>7</sup>

- Up to 10 stations: EUR 2 200 (AUS 3450)
- Up to 100 stations: EUR 5 550 (AUS 8700)
- Over 100 stations: EUR 11 100 (AUS 17230)

None of the above-mentioned jurisdictions prorates taxes for the use of frequencies according to location of earth stations.

### **US-based Model**

The US FCC rules allow for blanket licenses for ESIMs using the same standard as for fixed earth station. As in the UK, a relatively modest flat fee, independent on the amount of spectrum used or the number of terminals, is applied.

### **License Exemption**

In addition to jurisdictions that charge some nominal tax for the use of frequency spectrum, there are several countries in Europe which have implemented ECC decisions and exempted earth stations from licensing; in addition, they do not subject the use of frequencies, if exempted, to taxation. A similar approach has been taken by New Zealand, where the majority of earth stations are covered by a General User Radio Licence (GURL),<sup>8</sup> under which there are no charges for the use of frequency spectrum.

This approach greatly benefits not only satellite network operators, but other service providers who often use satellite components for connecting their networks, or retailers who resell satellite

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<sup>6</sup> Notice No. DGRB-009-99.

<sup>7</sup> Annex 10, Article 1, of the [Electronic Communications Code](#).

<sup>8</sup> [Radiocommunications Regulations \(General User Radio Licence for Satellite Services\) Notice 2017](#).

services. End users also benefit, as they have access to cheap and reliable connectivity whenever they move.

### Reform of Satellite Licensing Fee Framework

As noted above, the Australian spectrum fees for earth stations are relatively high by international standards. This is particularly prohibitive for newer technologies without a track record of commercial viability. Australia enjoys several competitive advantages when it comes to the provision of satellite communications, but these are diminished by the current tax system. At the moment, operators are discouraged from offering innovative solutions which are less known to consumers, effectively resulting in slower adaptation of new technological capabilities in Australia compared to other countries.

The comparison with Canada, for example, suggests that reductions in the base price of spectrum in other satellite bands are also warranted. Australia's fees in the Ku and C bands are even higher than in the Ka band, while many other countries do not distinguish between different FSS or BSS bands when setting fees, i.e. the same fee applies equally in the C band, Ku band and Ka band. As a result, Australia's fees on C and Ku band look even higher in comparison. Intelsat suggests that base prices for Australia-wide and high-density area licenses in these other bands also be reduced by at least 50%.

ACMA should consider adopting a fee system which more closely resembles those in other countries, as described above, recognizing technological solutions with increased spectrum use that do not result in greater interference. A fee structure in which nominal fixed fees are charged opens up the market for new entrants and stimulates the competition, bringing newer and more spectrum-efficient technologies to the market. Ultimately, this increased competition will benefit the consumer, who will enjoy a wider set of choices and lower prices. However, as service affordability is a key driver for consumers, excessive spectrum access fees jeopardize the successful deployment of services. Current usage fees constitute a barrier to competition which hinders the development of innovative services.

Intelsat recognizes the role ACMA plays in regulating and managing spectrum pricing and supports ACMA's approach to implement the recommendations received from the industry on the Spectrum Pricing Review. Intelsat understands that spectrum access fees imposed by administrations must promote the efficient use of spectrum. ITU defines technical efficiency as a specific goal to ensure that frequencies are used efficiently, allowing for the maximum utilization of spectrum by avoiding, for example, interference and unnecessarily large gaps ('guard bands') between adjoining users.<sup>9</sup> Moreover, ITU emphasises that technical efficiency encourages the deployment of more advanced technologies. Efficient use of spectrum can only be achieved when spectrum users are able to respond to the incentive factors incorporated in spectrum usage fees (such as frequency band and bandwidth, geography, time and coverage density). However, the current Australian fees do not take into consideration the spectrum efficiencies made possible by new satellite technologies.

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<sup>9</sup> Page 10 of ITU Guidelines for the review of spectrum pricing methodologies and the preparation of spectrum fee schedules.

In summary, Intelsat appreciates ACMA's intention to lower taxes on the use of spectrum. However, a 50% reduction in high density areas (and Australia-wide) is not sufficient to have an impact on market competitiveness and expanding service offerings at better prices for all Australian citizens. Fees are very high from the start and 50% is just not enough. Intelsat suggests lowering taxes further for high density areas and Australia-wide in addition to further reducing taxes for frequencies provided under the Class License.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Sherille Ismail". The signature is written in a cursive style with a large, stylized initial 'S'.

Sherille Ismail

Associate General Counsel