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Response by OneWeb to the Isle of Man - Consultation on the Licensing of Satellite Earth Stations and related Modification of a Telecommunications Act Licence

OneWeb (the trade name of Network Access Associates Ltd, a UK-based company; itself a subsidiary of WorldVu Satellite Ltd, Jersey) is a communications company building a global network to provide low latency broadband to underserved areas, using non-geostationary satellites (NGSO). Starting in 2019, the communications network will operate world-wide via an initial constellation of 648 low earth orbiting (LEO) satellites providing broadband to end-users anywhere in the world through small, affordable terminals. In particular, OneWeb will have the opportunity to address broadband access requirements for underserved and unconnected communities in rural and remote areas of the UK and its dependencies, as well as all other countries, with speed and capacity comparable to, if not better than, that offered today in urban areas.

Proposal 1: Operators holding a full TA licence and other licensed operators may require a new Part in their licence. New entrants will require a TA licence that includes the conditions of the new Part. Do you agree with this proposal?

OneWeb Response to Question 1

The licensing of Permanent Earth Stations (PES) is a process which is well established in many countries around the world, including the United Kingdom. A permanent earth station has the specific aim to communicate directly with satellites,

providing only a means of a physical connection between the access point of the satellite ground network and the satellite itself, and not with consumers. As such the UK/Ofcom and in many other countries, PES licensing only requires a WTA license, i.e. a spectrum only licence and not a Telecommunication licence. This is mainly because the only issue with regard to a PES is co-existence with other radio stations around it, which is covered already by the WTA of the UK, and similarly with the EC Authorisation Directive. A TA would normally imply additional requirements above and beyond that covered by a WTA, which may not be relevant to a PES.

In regard to the question above, OneWeb understands that the current TA licences have so far been used for terrestrial services. Therefore, in that respect, it seems that the most logical way forward for your proposal would be to restrict the current TA licensing regime to the provision of terrestrial services and direct-to-home satellite services.

For the satellite PES authorisation regime, OneWeb would suggest that the Communication Commission of the Isle of Man create a separate regime based purely on co-existence of the PES with other radio services, in harmony with the regulatory framework of the UK and with the international radio regulations of the ITU.

The need of a TA for a PES

It is not clear why a TA licence would be required for such PES where there may not be any services offered directly to citizens and consumers associated with the authorisation. As a matter of fact, Ofcom's definition of PES describes its use as "A PES is typically used to provide telephony and data backhaul, broadcast feeder links, private corporate networks or satellite telecommand and control."¹ These services are not services direct to clients. For example, OneWeb may wish to deploy a gateway earth station (a PES) to provide Internet backhaul through the Isle of Man, but serving clients outside the Island.

Section 3.1 of the Consultation stipulates the dual goals of maximising investment in communications infrastructure and services to the Island. For satellite communications, the first goal of maximising investment does not necessarily lead to services locally. Therefore, the notion of "service" should not be considered for licensing a PES.

A TA licence would seem more appropriate for the ISP or telecom operator, who would use our satellites (and possibly their own gateway) to provide services directly to clients or the public, through spectrum licences and/or class licences for the user terminal located on client's premises in the IoM.

¹ <http://licensing.ofcom.org.uk/radiocommunication-licences/satellite-earth/earth-stations/pes/>

Proposal 2: Spectrum for Earth Stations will be awarded on a first-come-first-served basis, and an obligation to launch a service within a specified amount of time will not be imposed. Do you agree with this proposal?

OneWeb answer to Question 2:

We recognise that administratively, applications are processed by regulators on a first-come and first-serve (FCFS) basis. However, this concept should not go beyond the mere administrative processing of the application, except where one application can preclude the other.

Such a FCFS process needs to carefully assess the potential for spectrum hoarding, or speculative use, especially if there is no time imposed to use the frequencies (in support of a service or other function).

FCFS process as it applies to one PES versus another, both communicating with geostationary (GSO) satellites

We note that PESs of different GSO satellite operators are not mutually exclusive (except in some reverse band-working FSS and BSS allocations), since operational measures assure that there will be no mutual interference between PESs operating in the same direction of transmission. For PESs operating on the same network, satellite operators will decide which PES gets which frequency by virtue of their satellite channel (transponder) contracts. For the case of two PES sharing the same spectrum, even if co-located but communicating with two different satellites, these can co-exist as long as the two satellites have been coordinated at the ITU and appropriate operational measures have been agreed between the two operators to reduce the mutual interference.

FCFS process as it applies to one PES of a non-geostationary (NGSO) satellite system and the other with a GEO satellite

There are cases, however, where the use of frequencies by one PES licensee could preclude access by others. For example, if one licensee is granted a licence to operate with all GSO satellites in view (sometimes referred to full-arc licences), then other licensees could be prevented from operating near the vicinity of that earth station. In the case of the OneWeb NGSO satellite network, its system is designed to prevent interference into the geostationary satellite networks, by orbital arc avoidance mechanisms defined by the ITU, and compliance to these regulations is facilitated by geographic separation between earth stations. Therefore, PES licences should be awarded only where there is a real need and intent to deploy such stations, otherwise uncompetitive behaviour could arise between operators even though spectrum can be shared between PES located on the Island.

PES in Reverse-Band Working Satellite Allocations

In the rare cases where PES of different satellite services may operate in a reverse-band working mode, such as in the 17.3-17.7 GHz allocation, the operations of such station will be mutually coordinated by the operators. In such cases, the Communications Commission may adopt a first-come, first-serve basis approach as provided by the ITU coordination process and not by mere submission of the application to the Commission.

FCFS process as it applies between PES and terrestrial station licensing

While a first come-first served basis seems a fair process, it is suggested that this concept should be clarified and moderated by a coordination process between PESs and terrestrial services. In particular, it should be clear for the applicants which date would count to determine the priority of the terrestrial station or earth station; the date of the application would typically be chosen.

Where the frequency spectrum is shared between terrestrial and satellite services, and there is a need for protection, a coordination system may need to be implemented. The ITU and the Ofcom have developed regulations to ensure the coordination between existing services and limit the possibility for interference between services. This process can easily be applied here.

Such a process would require applicants for PES licences, to undertake coordination with existing terrestrial stations using similar frequencies in the same geographical area to avoid mutual interference, unless technical studies show that no harmful interference is to be expected. Conversely, applicants for new terrestrial licences (either full TA licences or any other licences) would need to coordinate with existing earth station licensees, operating nearby and where their frequencies overlap, unless technical studies show that no harmful interference is to be expected.

Views on the First-come, first-served (FCFS) process

Considering that the Commission also proposes not to have any obligations for using the licensed frequencies within a specified amount of time, this could lead to spectrum hoarding by speculators without a real need for the spectrum or a business plan. We suggest that licences to PES, and to terrestrial stations in bands shared with satellite services, be granted on a use it or lose it basis.

In addition, it is important not to create a system where the first awardee finds itself in a situation of monopoly, able to resell its bandwidth to later comers, or stopping any further application, especially in cases where spectrum can easily be shared between different operators.

Proposal 3: the licence award process for spectrum to be used by Earth Stations will comprise three stages, i.e. an Application Stage, Evaluation Stage and Award Stage, as described above. Do you agree with this proposal?

OneWeb Answer to Question 3

The process proposed could be simplified for a PES operator who does not provide a service in the Island, but deploys an earth station to provide satellite control facilities and/or feeder-links. In these cases, the application should be limited to the request for bandwidth use, and the commitment to meet the requirements set by the Communication Commission, Ofcom and the ITU on the issue of interference to and from other systems.

While not specifically addressed in the Proposal 3 above, we believe the Commission should further define what it means by the term “Turnover” in respect to fees (see Section 3.3 of the Consultation), namely in cases where the PES is not part of an overall service offering in the Island, but where it:

- is used for Telemetry, Command and Control of the satellite; and/or,
- is used as a gateway (for satellite feeder-link connections).

Also, it would be preferable if each step were limited by a response time from the Communication Commission and Ofcom.

The parallel application process is welcome. However, the recommendation criteria the Communication Commission would make to Ofcom should be detailed. It is therefore suggested that the process be altered and that the Ofcom agreement be obtained by the applicant directly to Ofcom before the formal request for a licence is made to the Communication Commission. Ofcom could inform the Communication Commission of the request placed and once the licence conditions are approved by Ofcom, the applicant should seek the final approval from the Communication Commission.

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