**ESOA RESPONSE TO THE OFCOM CONSULTATION DOCUMENT**
**VARIATION OF 28 GHz BROADBAND FIXED WIRELESS ACCESS LICENCES**

**31 January 2013**

ESOA is pleased to provide comments to Ofcom in response to the consultation: "Variation of 28 GHz Broadband Fixed Wireless Access Licences". ESOA is a non-profit European organisation established with the objective of serving and promoting the common interests of European satellite operators. The Association is the reference point for the European satellite operators industry in Europe and today represents the interests of 24 satellite operators, space manufacturers / launchers and other satellite actors who enable the delivery of communication services across the globe (see www.esoa.net).

In the consultation document, Ofcom proposes to extend indefinitely the duration of the BFWA licences held by Urban Wimax and Cable & Wireless. Ofcom also proposes to offer an equivalent change to the other licences issued in 2000, held by other 28 GHz BFWA licensees.

With the major global satellite operators and regional operators developing new systems for operation in the Ka-band frequencies, there is developing demand in the 28 GHz bands for satellite applications. A list of current and planned Ka-band satellite systems is provided in the annex. These systems currently provide, or will provide, a range of applications, including broadband internet access to fixed and mobile terminals. In general, the satellite applications which are being developed in the 28 GHz band, require authorisation procedures for either permanent earth stations, which would typically be licensed as an individual station; or for ubiquitously deployed fixed or mobile earth stations, which would typically be licence exempt. Neither option is currently available in the UK in the frequency bands within the scope of this consultation.

The year 2000 licenses are limited to terrestrial BFWA systems only and therefore FSS cannot be deployed under these licences. The 2008 28 GHz BFWA licences are technology neutral in theory - at least insofar that both terrestrial stations and satellite earth stations may be operated under the licence conditions. However, in practice, the licences are not suitable for most satellite applications. The 2008 28 GHz BFWA licences are in most cases for small geographic regions which does not fit the requirements for authorisation of ubiquitously deployed satellite terminals. Satellite systems, sometimes consisting of several geostationary or non-geostationary satellites, are usually designed

to provide coverage in the same frequency band over very large geographic areas, ranging from almost the entire earth surface to continental coverage (e.g. coverage of Europe). The authorisation of user terminals therefore usually requires a nationwide authorisation and small regional licences are not a suitable way of achieving authorisation for satellite operations. The licences also do not fit with the requirements for authorisation of a fixed permanent earth station, which require authorisation for a specific fixed location rather than an unlimited number of earth stations within a defined region.

Furthermore, the 28 GHz BFWA licences are for exclusive use (within a geographical region) of a particular frequency range. In contrast, a satellite earth station or satellite network does not require exclusive use of a particular frequency range – in the case of geostationary networks, the same frequencies are reused in the same geographic area by other networks but with a different orbital location. An orbital separation of two degrees between geostationary satellites is typically sufficient for the same frequencies to be reused. In fact, exclusive use of a particular frequency band for satellite services by a satellite operator could raise competition concerns, since the licensed operator could prevent a competing operator from providing equivalent service in the UK.

Even if the licences were to be made available to other operators in the future, whether by auction or by trade, the design of the year 2000 and the year 2008 licences make it impossible or impracticable that they could be used for satellite applications.

While the UK BFWA licences are clearly appropriate for terrestrial applications, it is apparent that they have not been successful. As far as information is available, there is little, if any, 28 GHz terrestrial equipment installed in the UK. Hence these bands, which total more than 1.2 GHz of spectrum, have been virtually unused. This includes the band 28.8365-28.9485 GHz which is intended to be used for the uncoordinated FSS earth stations through ECC Decision ECC/DEC/(05)01 (with links existing before 2005 being grandfathered).

It is notable that the year 2000 licences included a “use it or lose it” clause[1]. This shows a desire at the time of licensing to ensure that the spectrum was not left idle – an objective which seems not to have been successful.

With this backdrop, it does not seem appropriate to continue a licensing regime which has been largely unsuccessful in bringing the spectrum into use and which effectively prevents use of the same spectrum by satellite services in the UK. Consequently, ESOA does not support the proposal to extend the duration of the current licences. Instead, ESOA proposes that a broader review is undertaken to determine the best licensing regime for these bands, taking into account the burgeoning needs of the satellite community. At the termination of the current licences, some of the bands currently subject to 28 GHz BFWA licences might be opened to new satellite applications, which would require a different approach to authorisation, with new licences designed to meet the requirements of satellite users.

[1] According to the draft licence contained in the Information Memorandum, available at http://www.ofcom.org.uk/static/archive/ra/topics/bfwa/doc28ghz/info_mem/bfwa_contents.htm

ESOA thanks Ofcom for the opportunity to comment and would be pleased to engage with Ofcom in further discussions, or to provide further information as required.

**Annex**

| **Table 1: Launched Satellites With Ka-band** | |
|---|---|
| **Company** | **Satellite System** |
| Arabsat | Arabsat-5A, Arabsat 5C |
| Avanti | HYLAS-1, HYLAS-2 |
| Eutelsat | Eutelsat-W3 series, Ka-Sat |
| Hispasat | Spainsat, Hispasat-1E |
| Hughes | Spaceway-3 |
| Intelsat | IAS-28 |
| Ipstar | Ipstar |
| Iridium | Iridium (LEO) |
| JAXA/NICT | Winds |
| Nilesat | Nilesat 201 |
| SES | ASTRA 1H, ASTRA-1L, ASTRA-3B, ASTRA 4A, AMC-15, AMC-16, NSS-6, ASTRA 2F, SES-5 |
| Spacecom | Amos 3 |
| Telesat Canada | Nimiq 4 |
| ViaSat | ViaSat-1, Wildblue -1, Anik-F2 |
| Yahsat | Yahsat 1A, Yahsat 1B |

| **Table 2: Planned Satellites With Ka-band** | |
|---|---|
| **Company** | **Satellite System** |
| ABS | ABS-7, ABS-2 |
| Arabsat | BADR 7 |
| Avanti | HYLAS-3, HYLAS-4 |
| Eutelsat | W3C, EUTELSAT-3B |
| Eutelsat / ictQATAR | ES'HAIL |
| Hispasat | Hispasat AG1, Amazonas-3 |
| Hughes | Jupiter-1 |
| Inmarsat | Global Xpress (3 satellites, first launch in Q3 2013) |
| Inmarsat | Alphasat 1-XL (launch in Q2 2013) |
| Insat | G-Sat 14 |
| Measat | Measat -5 |
| NBN Co | NBN-1 / NBN-2 |
| NewSat | Jabiru 1 |
| O3B Networks Limited | O3b Networks (MEO, first launch in May 2013) |
| RSCC | Express AM5 & AM6 & AM7 |
| SES | Astra 2E, ASTRA 2G, ASTRA 5B |

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|---|---|
| SmartSat | SmartSat |
| Spacecom | Amos 4 & 6 |
| Telenor | Thor-7 |
| Telesat Canada | Anik F3 |
| Turksat | Turksat 4A / Turksat 4B |
| ViaSat | ViaSat -2 |

The data in Tables 1 and 2 have been compiled from information on satellite operator websites, third party consultant reports and analyst reports; it is not intended to be an exhaustive list. It is however indicative of the extensive investments which have been made in developing Ka-band satellite systems to date and the further substantial investments already committed or planned for new Ka-band satellite systems

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