

Intellect response to the Ofcom consultation on 'Award of Available Spectrum in the 10 28 32 and 40 GHz Bands':

Intellect welcomes the opportunity to comment on the consultation on the award of available spectrum in the 10,28,32 and 40GHz bands. We also support its technology neutral principles. Intellect's replies to these 4 questions are shown below:

1. Do stakeholders agree with the proposals for the award of licences in the 10GHz, 28GHz, 32GHz and 40GHz bands in 2007?

We agree in general with awarding these 4 bands and in one 'batch' not delaying the 40GHz but would challenge some of the details, as follows:

Re the 10GHz Band

Firstly, in the 10GHz band, packaging in 50MHz blocks might be preferable and provide for more flexibility and overall efficiency of use.

Secondly, the allowable emission masks for radars in the band *up to 10GHz* allow for power densities of at least +30dBm/MHz in the band centred on 10.175GHz, and only about 10dB lower at 10.525GHz. Other emitters in the radar band may have higher out-of-band emissions into these bands above 10GHz.

It therefore seems essential that Ofcom's exploration with MoD of the arrangements for the shared use of the bands being auctioned, which is mentioned in section 2.10 of the consultation document *should also take account of out-of-band emissions from the heavily-used radar band below 10GHz*. The further information which Ofcom intends to publish (mentioned in the same section of the consultation document) *should also make potential bidders aware of this issue*. Also the condoc fails to detail future (as opposed to current) X-Band amateur satellites in frequencies above and below package 1. Finally it is not clear whether the licensees of the '10GHz' spectrum will have equal primary status with the MOD or will be secondary users.

Re the 28GHz Band

The 28 GHz band is of immediate current interest for satellite telecommunications applications, as will now be explained.

The band 27.5 – 30.0 GHz has been widely considered for use in Ka-band satellite broadband systems employing multiple spot beams. The band 29.5 – 30.0 GHz is usually assumed for uplinks from small, unlicensed user terminals, whilst the remainder of the band (27.5 – 29.5 GHz) is usually reserved for gateway earth station uplinks. This "gateway" band encompasses the 28 GHz spectrum currently being considered for licensing by Ofcom (and includes spectral blocks already licensed for regional terrestrial use in 2000).

For Ka-band satellite broadband systems to be commercially viable it is necessary to operate with a few gateway stations serving a large user terminal population. This requires access to a large amount of spectrum for the gateway uplinks. The “gateway” band identified above provides up to 2 GHz of spectrum for this purpose. Most broadband systems rely on the ready availability of most if not all of this contiguous spectrum to achieve their full capacity potential (and hence their full revenue potential).

For example, HYLAS gateway uplinks utilise the contiguous band 28.0 – 29.5 GHz. This encompasses almost the entire spectrum being considered for licensing. HYLAS the European satellite for delivering Broadband to inaccessible places is scheduled for commercial operations in 2008, so thereafter there would be virtually no “unused or under-used spectrum” to put on the market. This would fulfil a stated objective of Ofcom’s licensing proposals.

Ofcom has already divided up the 28 GHz band with the award of 15 regional licences in 2000 for terrestrial use. The current proposals would promote further fragmentation of the band. *This fragmentation is seriously detrimental to the proper exploitation of the band for satellite broadband applications, as explained above.* The Ofcom proposal includes technical considerations concerning operation of satellite earth station uplinks *in addition to terrestrial services* and within the same spectral allocations. It is unclear to Intellect whether this is intended as:

- a) Technical guidance to a licensee who might also want to operate satellite uplinks in part of the licensed spectrum, or
- b) A statement that a licence is a pre-requisite to operate any satellite uplinks within the associated band (even if no terrestrial usage is planned).

If (b) is the case, that is, if a licence to operate one or more satellite earth stations in the UK over the whole of the 27.5 - 29.5 GHz “gateway” band will not be granted without the earth station operator purchasing *all of the spectrum available for licensing*, then clearly this discriminates against broadband satellite applications and is contrary to one of the stated working principles of Ofcom (namely not to discriminate against any technology or application).

The foregoing explanations have been provided within this Intellect response to emphasise among other things *the urgent need for a full clarification of the status of & arrangements for earth station uplink licensing with regard to Ofcom’s proposals for the 28 GHz band. Here, self evidently, the satellite operator has no interest in providing terrestrial services either on a regional or national basis, hence has no interest in purchasing licences for the latter purpose.*

2. Do stakeholders agree with the proposal to include in the award of the 32GHz band that portion of the band that has been open for point-to-point applications?

Yes.

3. Do stakeholders agree with the proposal to defer the release of the 40GHz band and review the position in two years' time?

No. To defer it may well prove to be a deterrent to innovation.

4. Do stakeholders have any other comments on the contents of this document?

Intellect requests an early time commitment from Ofcom as to when the full and final clarifications from the MoD will be available in relation to shared usage of the 10GHz band.

-----END-----