

*February 8, 2007*



**Ofcom Consultation:  
"Award Of Available Spectrum: 10, 28, 32 and 40 GHz:  
Spectrum Packaging & Auction Design"  
(11 January, 2007)**

**Avanti Screenmedia Group plc (Avanti)  
Comments & Proposals In Response To Above Consultation**

**1. Avanti's Commercial Interests At 28 GHz For Ka-band FSS Services**

Avanti is investing over £80m in the development of the first European dedicated Ka-band FSS spot beam satellite system (known as HYLAS). Avanti, therefore, has a direct interest in the utilisation of the 28 GHz band in the UK. The HYLAS project is being supported by HMG through the European Space Agency because it delivers objectives regarded as crucial to British industrial and social policy.

HYLAS will utilise the 28.0 – 30.0 GHz band, which has been widely considered for use in Ka-band satellite broadband systems employing multiple spot beams. The band 29.5 – 30.0 GHz will be employed in the HYLAS system for uplinks from small, unlicensed user terminals, whilst the remainder of the band (28.0 – 29.5 GHz) is reserved for Avanti's gateway earth station (GES) uplink. The frequency plan for HYLAS is illustrated in Figure 1.

Avanti has already filed through the UK Administration the HYLAS Ka-band satellite network frequencies through the UKDIGISAT-3 satellite system ITU filing. The relevant Advanced Publication Information (API) filing to the ITU is contained in ITU BR IFIC 2556 of 01.11.2005, API/A/3839, ID Number 105540620 (protected on 25.04.06). Avanti followed Ofcom's procedures for ITU satellite network filings including full due diligence on Avanti's plans, which specified the utilisation of a UK gateway operating over the contiguous 28-29.5 GHz band.

Avanti also notes that several other UK-based satellite operators have filed to the ITU (prior to June 2006) through the UK Administration for Ka-band FSS satellite systems which cover the 27.5 – 30.0 GHz range.

For the HYLAS Ka-band FSS satellite broadband service to be commercially viable it is necessary to operate with a single gateway station serving the projected user terminal population. This requires access to a large amount of spectrum for the GES uplink - up to 1.5 GHz of spectrum in the band 28.0 – 29.5 GHz for the case of HYLAS. HYLAS relies on the ready availability of this contiguous spectrum to achieve full capacity potential.

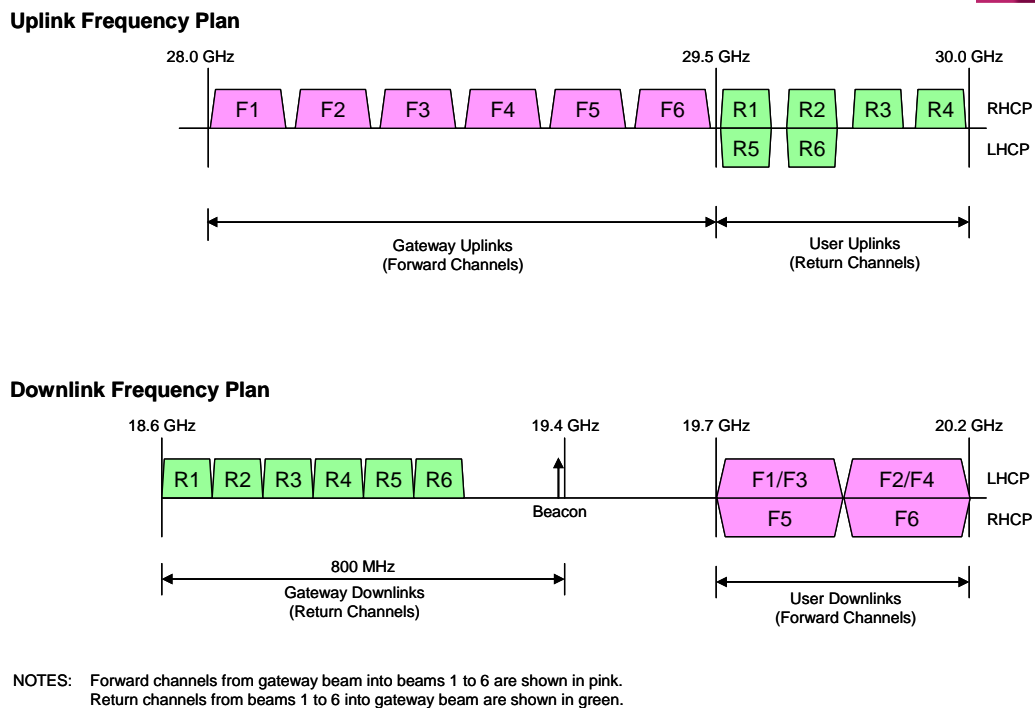


Figure 1. HYLAS Ka-band Frequency Plan.

## 2. UK Public Policy Issues

Avanti's HYLAS Ka-band FSS system – as well as other current and planned Ka-band FSS systems in Europe - will support the UK Government's objectives to provide affordable broadband services to unserved and underserved part of the UK. The HYLAS system is well suited to provide cost-effective broadband access to rural communities across the UK where no infrastructure currently exists and where it would be uneconomic to provide reliable high quality access by terrestrial means.

In "Connecting the UK: the Digital Strategy", April 2005, the Prime Minister states in the foreword that "most important of all, we must make sure the whole of society can experience the benefits of the internet". The HYLAS system directly supports the realisation of this objective at both the UK national and European level. The aforementioned report also states that "we (the Government) also expect the market to drive take-up and use, through the creation of new and innovative services". Unfortunately the proposed licensing regime at 28 GHz unduly and severely constrains the ability of Avanti and other UK FSS satellite operators to develop innovative Ka-band satellite broadband systems that meet the UK government "equal access" to broadband objectives. Avanti believes this public policy dimension must be taken into account by Ofcom in determining an appropriate, balanced and proportionate spectrum policy for the 28 GHz range.

Avanti's HYLAS system is a UK initiative designed to deliver service across much of the UK and Europe. It represents a major opportunity for UK industry to generate direct export revenues. Avanti believes that this international dimension and export opportunity should also be taken into account by Ofcom when considering the methods for assignment of the 28 GHz spectrum.

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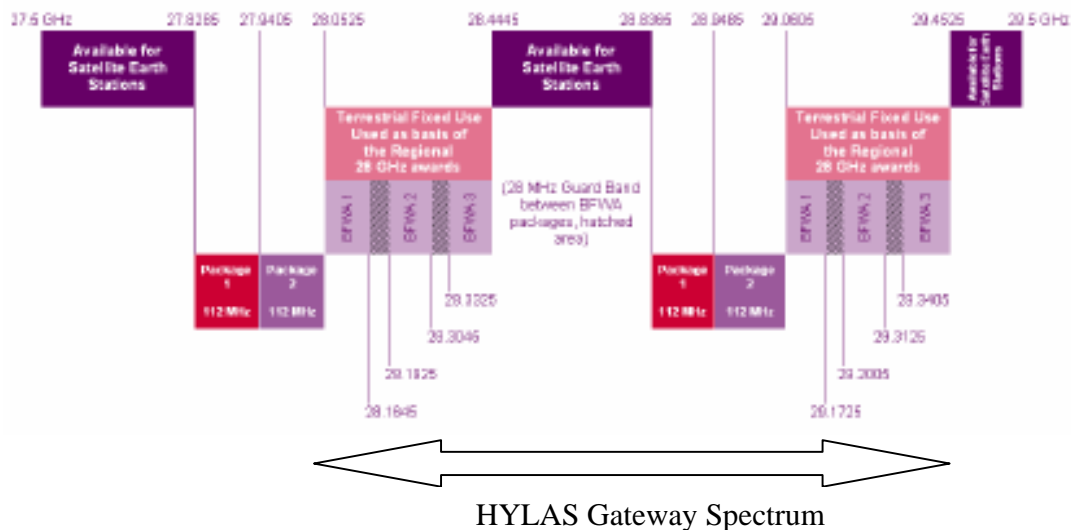
### 3. Impact Of Ofcom's 28 GHz Proposals For 28 GHz HYLAS System Operations

The Ofcom Consultation on "Award of available spectrum: 10 , 28, 32 and 40 GHz: Spectrum Packaging and Auction Design" (11 January, 2007) indicates that Avanti or any FSS GES operator in the UK will have to participate in the auction process in order to obtain the spectrum required for such a GES.

To locate its HYLAS GES in the UK, Avanti would have to secure licences for Ofcom's proposed BFWA1, BFWA2, BFWA3 licences covering the region in which the gateway station is located, plus national licences for Package 1 and Package 2. See Figure below. Avanti has no commercial interest or commercial requirement to acquire spectrum with UK national or UK regional footprints to enable its FSS GES operations on a highly localised basis. The same would be true for any other UK-based FSS GES operator.

Avanti's planned utilisation of the 28 – 29.5 GHz spectrum for GES operations requires communications from two well defined GES sites (a primary site and a diversity site). Such GES use can be co-ordinated using Ofcom's current site clearance procedures with respect to the use of the same band for terrestrial services. Avanti currently plans to make significant capital and operational investments in UK to develop a UK-located GES to support the HYLAS system. Those investments would be at risk if the current Ofcom proposals are adopted without appropriate provisions established by Ofcom to ensure viable co-primary FSS use of the 28.0 – 29.5 GHz band.

Figure 2 Band Plan 28 GHz (Frequencies in GHz)



The adoption of the Ofcom's current proposal would likely eliminate the ability of UK based GES operators to use Ka-band *co-primary* FSS spectrum for GES uplinks to Ka-band FSS satellite systems serving the UK, Europe or other regions outside Europe. The wider consequences of the proposed license regime as a result of the constraints imposed on utilising the full 28.0 to 29.5 GHz

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spectrum for co-primary FSS Ka-band GES operations would be to severely prejudice the UK's position as a host for satellite teleports for Ka-band FSS systems.

The structure of the 28 GHz auction as presently proposed in the identified frequency bands, inherently discriminates against FSS entities, since the definition of the frequency blocks and coverage areas disproportionately favours the interests and requirements of terrestrial operators over those of FSS satellite entities whose requirements for spectrum for GES operations are far more localised.

#### **4. Avanti's Proposals**

Avanti fully supports the broader concerns and proposals made by SAP REG and Intellect as relevant in response to this Ofcom consultation and the preceding Ofcom consultation (June 2006) relating to the 28 GHz band. Avanti supports the proposals by SAP REG and others that the frequency band 28.8365 – 28.9485 GHz should not be auctioned. It should instead be retained for FSS use (including uncoordinated FSS earth stations) in the UK for consistency with European spectrum harmonisation efforts defined in CEPT ECC Decision ECC/(05)01.

With regard to enabling the use of the 28.0 – 29.5 GHz band by FSS GESs in the UK, Avanti in particular proposes that:

- a) A mechanism is established by Ofcom that permits any FSS GES operator to use the entire 28.0 – 29.5 GHz band on a *co-primary shared basis* with other terrestrial systems by employing established *technical frequency co-ordination and site clearance procedures* for Satellite Earth Stations (SES) licensing. This would be consistent with the principle of equitable spectrum sharing on a co-primary basis. This implies that FSS entities (intending to operate one or more GESs at 28 GHz) should not be required to enter into commercial negotiations or commercial settlements with terrestrial entities which may win licence awards at 28 GHz in the relevant blocks of spectrum.
- b) The spectrum licence fee levels for Ka-band GESs should be based on Ofcom's Administrative Incentive Pricing (AIP) regime for SESs, which Ofcom has separately (and recently) concluded would promote efficient use of spectrum by FSS SES users (including in shared frequency bands). See Ofcom's statement "*Modifications to spectrum pricing*" (January 10, 2007) for satellite earth stations.
- c) Ofcom should retain the statutory power to intervene in the technical frequency coordination process between 28 GHz terrestrial operators and satellite entities to ensure that reasonable and equitable frequency sharing and frequency coordination agreements are implemented

The above approach would be entirely consistent with CEPT ECC Decision ECC/DEC(05)01, which stipulates the techniques to be employed to enable efficient utilisation of the 28GHz spectrum through terrestrial and satellite sharing.

The above approach would also be consistent with Ofcom's mandate to promote effective and efficient use of the radio spectrum resource and would furthermore be consistent with meeting broader UK public policy objectives in terms of enabling the provision of affordable broadband services to unserved and underserved areas of the UK.