



Opportunities for Developing UK Satellite Operations

UK Satellite Broadcasting Assignments at 33.5° West

A consultation document

July 2003

**The Radiocommunications Agency is an Executive Agency of the Department of Trade and
Industry**

1. EXECUTIVE SUMMARY

- 1.1 The Government wants to explore the possibility of collaboration between potential operators and the Radiocommunications Agency to develop the UK's geostationary orbit and spectrum resources in the 12 and 17 GHz planned bands. Access to these bands is through the use of frequency assignments, which are subject to a planning and co-ordination process defined in the ITU Radio Regulations (AP30/AP30A).
- 1.2 One aim of stimulating the development of a large allocation of satellite broadcasting spectrum is to enable the further supply of bandwidth and the rapid deployment of broadband services. Today's and tomorrow's consumers need access to high-bandwidth facilities that can provide low-cost, simple and ubiquitous reception of digital broadcast material; data generated by internet-related applications; and other bandwidth-hungry applications. Consumers will increasingly demand faster access to the myriad of information, education and entertainment services offered by the Internet, and to new services like video on demand.
- 1.3 The Government wants to promote competition, both in satellite delivery and more widely among wired and wireless platforms, to ensure that bandwidth is widely available to businesses and the home at affordable prices. Through this initiative, the Government wants to give operators the opportunity to exploit the UK and European market for satellite services, taking full advantage of the technological possibilities of a converged broadcasting, telecommunications and information technology environment.
- 1.4 This document:
- describes the current international regulatory framework for satellite broadcasting spectrum;
 - identifies potential opportunities for an operator to work with the Radiocommunications Agency to secure the rights and develop the confidence to invest in this market opportunity; and
 - invites interested parties to comment, if necessary in confidence, on related questions, listed in Section 6.
- 1.5 Responses to this consultation should arrive no later than **5pm on Friday 24 October 2003**. Please send your response to:

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Radiocommunications Agency
Wyndham House
189 Marsh Wall
London E14 9SX

Or email: joe.sonke@ra.gsi.gov.uk

Or fax: 020 7211 0203.

- 1.6 Any comments or complaints about the conduct of this consultation should be addressed to:

Julia Fraser
Information and Publicity Manager
Radiocommunications Agency
Wyndham House
189 Marsh Wall
London E14 9SX

Or email: julia.fraser@ra.gsi.gov.uk

Or fax: 020 7211 0507.

Publication of responses

- 1.7 Respondents to this consultation should note that, in the interests of open government:
- unless confidentiality is expressly requested, individual responses will be placed in the public domain in printed or electronic form, together with the names and contact details of authors. Respondents are requested to make it very clear if they wish to keep some or all of their response confidential;
 - unconditional permission to publish responses will be assumed unless the author expressly states otherwise;
 - any copyright attached to responses will be assumed to have been relinquished unless it is expressly reserved; and
 - the provisions of the Data Protection Act 1998 will apply to the information supplied.

Creation of Ofcom

- 1.8 The Communications Act 2003, which received royal assent on 17 July, will transfer the responsibility for regulating the radio spectrum from the Secretary of State to the new Office of Communications (Ofcom) by the end of 2003. Ofcom will merge the functions of five existing regulatory bodies – the Independent Television Commission (ITC), the Broadcasting Standards Commission, the Office of Telecommunications, the Radio Authority and the Radiocommunications Agency.

2. REGULATORY BACKGROUND

The position until 1997

2.1 The use of frequencies by satellite services is regulated by the International Telecommunication Union (ITU). The World Administrative Radio Conference 1977 (WARC-77) planned the 12 GHz broadcasting-satellite band and divided the geostationary orbit equally among the ITU member states of Regions 1 (Europe and Africa) and 3 (Asia and Australasia). The UK gained five downlink frequencies from an orbital position at 31° West, and was later allocated the related uplink (17 GHz) frequencies.

2.2 In 1990, the UK Government decided to seek additional assignments – through the Broadcast Satellite Service (BSS) Plan-modification procedures of Article 4 of Appendices 30 and 30A of the Radio Regulations – from broadcasting spectrum that had not been pre-allocated to any country as a national right. The UK obtained a further five uplink/downlink frequency pairs, but the subsequent frequency co-ordination negotiations with neighbouring countries were protracted, full clearance was not obtained until the assignments were formally added to the BSS plans on 12 March 1996.

WRC-97 Plan

2.3 The World Radio Conference 1997 (WRC-97) adopted, with UK support, new BSS downlink and feeder link plans for Regions 1 and 3. As a result, the UK lost its ten assignments from 31° West, but was granted ten assignments at 33.5° West – a position then shared with Ireland, Iceland and a number of African countries. These assignments represented a transfer from the old plan, but five assignments were subsequently deleted from the new plan under the ITU's 'due diligence' rules, as they had not been brought into use within eight years of the date of filing with the ITU Radiocommunications Bureau (ITU-BR). The other five assignments remained as our national entitlement.

2.4 WRC-97 also lifted the provision that prevented the Fixed Satellite Service (FSS) from using BSS assignments. This means that there is no longer any regulatory impediment to telecommunications (including interactive) use, within the required co-ordinated parameters.

WRC-2000

2.5 Following re-planning activities at the World Radio Conference 2000 (WRC-2000), the BSS Regions 1 and 3 Plans were overhauled. The national plan assignments, based on elliptical national coverage areas, were separated from the bulk of the operational assignments that had been entered into the Plans through the Article 4 modification process.

2.6 On average, WRC-2000 assigned ten national assignments for each country in Regions 1 and 3 thereby preserving these countries' future access rights; these

[assignments](#) are held in the Regions 1 and 3 Plan. The assignments belonging to real BSS satellite networks representing operational additional uses, such as those for sub-regional coverage, are now held in the Regions 1 and 3 List for [30](#) years ([15](#) years initially, renewable for a further [15](#) years).

[2.7](#) The technical sharing criteria used in the co-ordination process to protect assignments in the Plan and List [were updated](#), to [ensure](#) more appropriately the correct level of protection for such assignments.

[2.8](#) Similarly, the regulatory procedures of Appendix 30 and 30A [were revised](#) to implement the Plan and List concept. They now include an important provision that permits, in the case of continuing disagreement, the provisional notification of assignments onto the List for a single [15](#)-year period. [The removal of the conservative sharing criteria and inflexible provisions has reduced the risk to complete co-ordination and so the constraints on using the BSS Plan frequencies have also been greatly reduced](#).

[2.9](#) As a result of WRC-2000's positive outcome in re-planning the Regions 1 and 3 BSS [Plan](#), the UK [Government](#) is now in a more certain position with respect to its BSS assignments. It is expected that the Plan and List concept will be maintained and that there will be no need for future conferences to revisit this topic in any substantial way for many years.

[2.10](#) [WRC-2000](#) confirmed the UK's ten national assignments at the 33.5° West orbital position. This paved the way for the co-ordination and development of UK filings for all 40 channels over UK and European service areas. Co-ordination will [take place with](#) only those other administrations possessing Plan or List assignments within a $\pm 9^\circ$ co-ordination arc of 33.5° West. A preliminary analysis suggests that [there are](#) no major constraints [that](#) could jeopardise the development of the position.

3. SPECTRUM ORBIT RESOURCE AVAILABLE

3.1 In order to provide the basis for developing a viable UK-based satellite broadcasting service, the Agency submitted filings to the ITU-BR in 1998 for the five guaranteed downlink/uplink pairs and for a further 35 paired channels in the same orbital position, from BSS spectrum not pre-allocated to national administrations.

3.2 The BSS network, given the provisional name UKDIGISAT-1, aims to secure all 40 BSS channels at 33.5° West over a UK service area. To maximise the resource's potential and flexibility, filings for UKDIGISAT-2 (with a Europe-wide footprint) were also submitted to the ITU-BR in August 1998. Both filings are subject to the same co-ordination rules and criteria, but we expect the co-ordination of UKDIGISAT-1 to be secured first. This is because it covers the UK only, meaning that we will need to obtain agreements with fewer countries than for UKDIGISAT-2.

UK published plans

3.3 Details of publication of the UK plans are as follows:

- UKDIGISAT-1 published by ITU-R on 26 November 2002 (BR IFIC 2483 AP30/E/214 refers), and MOD-1 BR IFIC 2489 AP30/E/214 (11 March 2003).
- UKDIGISAT-2 published by ITU-R on 25 February 2003 (BR IFIC 2488 AP30/E/229 refers).

These filings expire eight years after dates of receipt at ITU-BR, which were:

- UKDIGISAT-1 – receive date 5 January 1998.
- UKDIGISAT-2 – receive date 7 September 1998.

4. CO-ORDINATION ISSUES

Partnership between the Government and the operator

- 4.1 The changes introduced to criteria and procedures at WRC-2000 have reduced co-ordination burdens, and we expect that co-ordination will be completed within the timescales for the design, procurement and launch of satellites.
- 4.2 The operator will need to consider the real interference problems with adjacent satellites as well as with any other (possibly uncoordinated) proposals that we believe will lead to operational systems. The operator will need to seek to resolve the issues bilaterally with the relevant operators and, where necessary (and with the support of the Agency), the host administrations.
- 4.3 The rights to spectrum-orbit resource at 33.5° West that the Government has to offer are now far more easily defined. Notwithstanding this, the UK cannot wait to gain full co-ordination of the frequency assignments before advertising the assignments to interested parties, as this would reduce the time available before we run out of time under the ITU's due diligence procedures. (This is due to delays in processing and publishing of filings at ITU following WRC-2000.)
- 4.4 Also, an early demonstration of commitment is required, for example by reporting to the ITU (under the due diligence procedures) that satellites are under procurement and launch dates arranged.
- 4.5 The Government believes that the most practicable way forward is for the Agency and an operator to work together to secure and develop our rights through the ITU. The aim will be to:
 - progress the UKDIGISAT filings;
 - pursue co-ordination of our filings at the international level; and
 - agree our proposals on a bilateral operator-to-operator basis with other actual or potential operators and host administrations.

Further opportunities beyond Europe

- 4.6 This consultation seeks primarily to develop BSS opportunities using the downlink frequencies at 12 GHz and feeder link frequencies at 17 GHz in the planned bands (governed by Appendices 30 and 30A of the ITU Radio Regulations). However, the opening of a UK operational orbital position at 33.5° West has further potential. In particular, there is the opportunity to develop satellite filings for other satellite payloads for services in the non-planned FSS and BSS frequency bands: examples of this could be Ka band return paths from individual consumer terminals, and transatlantic Ku/Ka band traffic.

5. LICENSING CONSIDERATIONS

Wireless Telegraphy Act

- 5.1 The use of feeder link frequency assignments by earth stations located in the UK would be licensed under the Wireless Telegraphy (WT) Act 1949. However, the UK would wish to allow the satellite operator (or the organisation leasing the transponder from the satellite operator) to uplink services from anywhere within the European service area – as do ASTRA and EUTELSAT customers, for example – subject to local earth station co-ordination and licensing in the country concerned.
- 5.2 The means to operate and control the satellite via the telecommand, tracking and control frequencies would also be licensed.
- 5.3 We would also require the operator to be registered as a UK company, since the ITU requires that operators are appropriately regulated.

Fees

- 5.4 Where an auction is not involved in assigning the resource, any fees would be subject to administrative pricing. In setting such fees, the Agency (Ofcom) would have regard, in particular, to various spectrum management factors set out in the WT Act 1998:
- the extent of spectrum availability;
 - the current and future expected demand for use of the spectrum; and
 - the desirability of promoting:
 - ◆ efficient spectrum use and management;
 - ◆ economic benefits;
 - ◆ development of innovative services; and
 - ◆ competition.

Broadcasting Acts 1990 and 1996

- 5.5 If assignments are used for TV broadcasting purposes, the applicant may need to secure the provision of relevant Satellite Television Services licence from the ITC and related licences for sound services from the Radio Authority (or the equivalent licence(s) from Ofcom).

Telecommunications Act 1984

- 5.7 5.6 On 25 July 2003, a package of EU Directives came into force, altering the regulatory regime under which the telecommunications sector operates. One of the principal changes will be the ending of the current individual licensing regime. The obligations in licences will be replaced by a set of general and specific obligations,

with which operators will need to comply. Information on the implementation of the new EU regulatory framework's various provisions and requirements is available on the Ofcom website at www.ofcom.gov.uk/publications/eu_directives/index.htm.

Outer Space Act 1996

- 5.7 Applicants will also need, at the appropriate time, to meet any requirements of the Outer Space Act 1996. This Act regulates space activities by UK bodies, including the launch and operation of satellites. Licences under the Act are issued by the British National Space Centre.

6. APPOINTING A SATELLITE OPERATOR

- 6.1 The Government believes that the best way forward is to offer an operator the opportunity to work through the regulatory and co-ordination issues with the Agency (Ofcom when it takes responsibility for spectrum management), with the objective of building sufficient confidence to procure and launch a BSS satellite. The Agency would welcome expressions of interest from satellite operators and others who would like to take up this opportunity. We will treat any expression of interest in confidence, unless the respondent wishes it to be published.

Q.1 Are you interested in working through the regulatory and co-ordination issues with the Radiocommunications Agency (Ofcom when it takes responsibility for spectrum management), with the objective of building sufficient confidence to procure and launch a BSS satellite?

- 6.2 Assuming there is sufficient interest, the Agency will need to develop a process for selecting the most suitable partner. The Government believes that auctions are the fairest, most transparent and most efficient way of assigning spectrum to those who value it most and can generate the greatest value from it. The Government's policy is to favour auctions when considering mechanisms for assigning spectrum, but it recognises that auctions are not always feasible or appropriate.
- 6.3 One alternative to an auction would be some form of comparative selection, designed to assess the suitability of competing candidates against pre-determined criteria.

Q.2 What do you think would be the best process for selecting a partner to work with the Agency?

- 6.4 If, as a result of responses to this consultation, the Government decided to appoint a satellite operator by comparative selection, rather than by auction, it would examine bids against suitable criteria. Such criteria would be likely to include:

- sufficient technical, financial and legal credentials to construct, launch and operate the proposed satellite system within the timescales contained in the applicant's business plan;
- the timescale for the introduction of the service;
- demonstrable commitment to dealing with the international regulatory and co-ordination issues, both alongside the Agency and with other operators; and
- a thorough understanding of the ITU Radio Regulations and procedures relating to filing, co-ordination and notification of satellite networks in general (including due diligence procedures), and of the unique situation of planned BSS networks in particular.

6.5 Bids would also have to be supported by [the following](#) detailed information:

- [an outline business plan](#), including details of the applicant's ownership, its relations with suppliers and customers, and its financial and managerial resources;
- [details of the system configuration and the range of services to be offered, and the sections of the market expected to be targeted;](#)
- [likely sources of equipment, with particular emphasis \[on\]\(#\) innovative features; \[and\]\(#\)](#)
- [the technical equipment standards to be used and their relationship to existing or proposed European harmonised standards.](#)

Q.3 If a comparative selection process is adopted, what criteria do you think should be used?

6.6 Some basic requirements, whatever selection process is used, will be for:

- [the Satellite Control Centre \(SCC\) – i.e. the facility that monitors \[the\]\(#\) correct functioning of the key technical parameters, and controls the partial or complete closedown of a satellite network – to be located in the UK;](#)
- [the SCC facility to be licensed. The licensing provisions shall ensure that the licensing authority has adequate regulatory control over the facility in the event of interference to other radio services. This requirement would be covered by a Permanent Earth Station licence issued by the Agency under the WT Act \[1949\]\(#\); \[and\]\(#\)](#)
- [satellite networks notified or registered by the UK administration to be operated in conformity with the relevant international treaties to which the UK is a signatory.](#)

Q.4 Do you think it is reasonable to require the Satellite Control Centre to be located and licensed in the UK?

6.7 It has already been indicated that the bands could be deployed for various purposes and the Agency is minded not to restrict unduly operators. However, the Agency would appreciate a business perspective of what services could be deployed from this geostationary satellite position.

Q.5 What do you foresee to be the potential uses for this radio spectrum?

- 6.8 If no operator is prepared to go forward on the basis outlined above, the Government may withdraw from actively trying to protect any development interests at 33.5°W (including our national allocation), in line with ITU principles of efficient and equitable use of the spectrum-orbit resource.

Summary of questions

Q.1 Are you interested in working through the regulatory and co-ordination issues with the Radiocommunications Agency (Ofcom when it takes responsibility for spectrum management), with the objective of building sufficient confidence to procure and launch a BSS satellite?

Q.2 What do you think would be the best process for selecting a partner to work with the Agency?

Q.3 If a comparative selection process is adopted, what criteria do you think should be used?

Q.4 Do you think it is reasonable to require the Satellite Control Centre to be located and licensed in the UK?

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