



**Award of licences in the
frequency bands 542 to 550 MHz
and 758 to 766 MHz covering
Cardiff and Manchester**

Information Memorandum

Publication date: 29 October 2008

Important Notice

Ofcom has prepared this Information Memorandum ("**Memorandum**") in connection with the proposed award by auction of Licences in the 542 to 550 MHz and 758 to 766 MHz spectrum bands covering Cardiff and Manchester. Terms and expressions used in this Memorandum are as defined in annex 4 of this Memorandum.

The Award Process will be conducted in accordance with regulations we make pursuant to powers under Section 14 of the Wireless Telegraphy Act 2006, pursuant to which the grant of the Licences may be made following a procedure set out in regulations we issue.

The regulations to be made in respect of these awards are referred to in this Memorandum as "**the Regulations**". The Regulations were issued in draft for statutory consultation on 29 October 2008 and a copy of the Notice of our proposals to make regulations in connection with these awards, including a copy of the draft Regulations, is also available from our website. Recipients of this Memorandum should also note that only the Regulations when made have statutory effect. Accordingly, in the event of any difference between this Memorandum and the provisions of the Regulations, the Regulations are definitive.

This Memorandum is for information purposes only. It is made available on the express understanding that it will be used for the sole purpose of assisting the recipient of this Memorandum in deciding whether it wishes to proceed with a further investigation of possible participation in the Award Process. This Memorandum is not intended to form any part of the basis of any investment decision or other evaluation or any decision to participate in the Award Process, and should not be considered as a recommendation by us or our advisers to any recipient of this Memorandum to participate in the Award Process. Each recipient of this Memorandum must make its own independent assessment of the potential value of a Licence after making such investigation as it may deem necessary in order to determine whether to participate in the Award Process. All information contained in this Memorandum is subject to updating and amendment.

While the information contained in this Memorandum is believed to be accurate as at the time of publication, we have not independently verified it. Neither we nor any of our advisers nor any of their respective directors, partners, officers or employees make any representation or warranty (express or implied) nor accept nor will accept any responsibility or liability as to, or in relation to, the accuracy or completeness of the information contained in this Memorandum or any other written or oral information made available to any interested party or its advisers. Any liability in respect of any such information or any inaccuracy in this Memorandum, or omission from this Memorandum, is expressly disclaimed. In particular, but without prejudice to the generality of the foregoing, no representation or warranty is given as to the achievement or reasonableness of any future projections, estimates, prospects or returns contained in this Memorandum.

This Memorandum does not constitute an offer or invitation to participate in the Award Process, nor does it constitute the basis or any part of any contract that may be concluded in relation to the Award Process or in respect of any award of Licences.

Recipients of this Memorandum are not to construe the content of this Memorandum, or any other communication by or on behalf of us or any of our advisers, as financial, legal, tax or other advice. Accordingly, each recipient of this Memorandum should consult its own professional advisers as to financial, legal, tax and other matters concerning any potential participation in the Award Process or any award of wireless telegraphy licences.

This Memorandum is available only on our website at:
<http://www.ofcom.org.uk/radiocomms/ddr/>. In the event of any discrepancy between different versions, the latest published version on our website is definitive.

Following issue of this Memorandum, we may publish further information and guidance. All requests for information will be handled in line with the Freedom of Information Act 2000. We may publish (including on our website), in whole or in part, questions received from recipients of this Memorandum and the answers provided unless confidentiality has been requested. The identity of those asking the questions will not be published without the questioner's permission.

Recipients of this Memorandum are encouraged to register their email addresses with us so as to receive notifications of the publication of further information automatically, but it remains their responsibility to check our website for updates. Registration of address should be made by following the registration procedure at the relevant page on our website at:
<http://www.ofcom.org.uk/static/subscribe/radiospectrum.htm>. Shortly before the commencement of the Award Process, the Ofcom website will carry the detailed information about the Award Process.

Contents

Section		Page
1	Executive summary	1
2	The spectrum to be awarded	6
3	The Licences	24
4	The award process	31
5	Associated policy issues	45
6	Application instructions	62
Annex		Page
1	Draft Licences	63
2	Interoperability	94
3	Glossary	101

Section 1

Executive summary

Introduction

- 1.1 This Memorandum provides information for those parties considering bidding for a licence (referred to in this Memorandum as a "Licence") under the Wireless Telegraphy Act 2006 ("WT Act") to establish or use stations for wireless telegraphy or install or use apparatus for wireless telegraphy at the locations set out in Table 1.1 below and in accordance with the technical parameters detailed for each Lot in section 2 of this Memorandum.
- 1.2 These are the first of a number of planned awards of licences for geographic Lots of interleaved spectrum. Separate Information Memoranda will be issued for future awards.
- 1.3 We will hold a separate award for each of the Lots. The awards will be held concurrently, and the Award Process in each case will be identical.

Table 1.1 Lots to be awarded

	Transmission site	Frequency channel (range)	Area
Lot 1	Wenvoe	Channel 30 (542-550 MHz)	Cardiff area
Lot 2	Winter Hill	Channel 57 (758-766 MHz)	Manchester area

Source: Ofcom

- 1.4 In particular, this Memorandum:
 - describes the characteristics of the spectrum lots for which Licences are to be awarded (Section 2);
 - summarises the principal terms of the Licence that will be issued following the completion of each Award Process (Section 3);
 - summarises the steps that persons need to take to qualify and take part in either of the Award Processes (Section 4); and
 - summarises a number of associated policy issues that may be relevant to the awards (Section 5).
- 1.5 Table 1.2 below provides an overview of the Lots available, the rights and obligations under the Licences to be issued and the rules for the conduct of the Award Processes.

Table 1.2 Summary table

Spectrum packaging							
Transmission sites and frequency channels (ranges)	<p>The following lots will be auctioned:</p> <table border="1"> <tr> <td>Lot 1</td> <td>Wenvoe</td> <td>Channel 30 (542-550 MHz)</td> </tr> <tr> <td>Lot 2</td> <td>Winter Hill</td> <td>Channel 57 (758-766 MHz)</td> </tr> </table>	Lot 1	Wenvoe	Channel 30 (542-550 MHz)	Lot 2	Winter Hill	Channel 57 (758-766 MHz)
Lot 1	Wenvoe	Channel 30 (542-550 MHz)					
Lot 2	Winter Hill	Channel 57 (758-766 MHz)					
Coverage	<p>The coverage of each lot will be what is achieved by transmitting within the technical parameters set out for each Licence, broadly as follows:</p> <table border="1"> <tr> <td>Lot 1</td> <td>Cardiff area</td> </tr> <tr> <td>Lot 2</td> <td>Manchester area</td> </tr> </table>	Lot 1	Cardiff area	Lot 2	Manchester area		
Lot 1	Cardiff area						
Lot 2	Manchester area						
Rights and obligations							
Purpose of use	The Licences will allow any use that respects the technical parameters.						
Technical parameters for digital terrestrial television (DTT)	The Licences will include a block edge mask and technical parameters suitable for DTT.						
Technical parameters for services other than DTT	If the Licensee wishes to use the Licence for services other than DTT, we will consider varying the technical parameters included in the Licence accordingly.						
International coordination	The Licences will prohibit the international coordination threshold from being exceeded.						
Licence conditions	<p>The licence conditions include technical conditions to:</p> <ul style="list-style-type: none"> • ensure compliance with international and legal requirements; and • ensure effective use of the licensed frequencies by controlling interference between different authorised users. <p>The licences will also contain conditions specific to television and radio multiplex services.</p> <p>For avoidance of doubt, the Licences do not guarantee exclusive use of the spectrum. In the future, we may grant additional authorisations to allow the use of all, or part, of the spectrum, which may include frequency channels covering Cardiff or Manchester. We would develop the conditions of use under such additional authorisations in order to manage the risk of harmful interference and would consult on these conditions.</p>						

<p>Multiplex ownership</p>	<p>A Licensee falling within, or controlled by a person falling within, one of the categories listed below may not use the Licence to provide a television multiplex service:</p> <p>(a) a local authority;</p> <p>(b) a political body;</p> <p>(c) a religious body;</p> <p>(d) persons who, in the opinion of Ofcom, are subject to undue influence by a local authority or a political body such as to act against the public interest; and</p> <p>(e) any body controlled by a person falling within the categories (a) to (c) above.</p>
<p>Interoperability with existing multiplexes</p>	<p>If a Licence is used to provide a television multiplex, the Licensee must ensure that any logical channel numbers (LCNs), network and service identification and other labels of transport stream components used do not conflict with those used by other multiplex operators.</p>
<p>Licence term</p>	<p>Each Licence will be of indefinite duration and continue in force until surrendered by the Licensee or revoked by us.</p> <p>We may revoke the Licences for a number of reasons, including non-payment of fees, breaches of the conditions of the Licence, and spectrum management reasons, with appropriate notice.</p> <p>During the period from the grant of the Licence to 30 October 2026 (the initial term), we will not revoke the Licence for spectrum management reasons.</p>
<p>Licence fee</p>	<p>The Licence fee for the initial term (the period from the grant of the Licence to 30 October 2026) will be determined by the auction process.</p> <p>After the initial term, we expect further fees, including fees set using administered incentive pricing (AIP), to be payable.</p>
<p>Spectrum trading</p>	<p>The rights and obligations conferred by the Licence will be tradable.</p> <p>All types of trade (partial or total, concurrent or outright) will be permitted.</p>
<p>Award mechanism and auction rules</p>	
<p>Auction format</p>	<p>We will hold a separate single unit ascending bid auction for each Lot.</p> <p>The auctions for each Lot will be held concurrently.</p>

<p>Basic award process</p>	<p>Each award will take place over four stages:</p> <ul style="list-style-type: none"> • an Application stage; • a Qualification stage; • an Auction stage, which will comprise one or more Bid rounds until only one valid Bid remains; and • a Grant stage, during which we will grant a Licence to the Winning Bidder. <p>If there is only one Bidder at the end of the Qualification stage there will be no auction stage and the Bidder will pay a licence fee of £10,000.</p>
<p>Bid price in the first round</p>	<p>Bids in the first round must be between £10,000 and £15,000.</p>
<p>Deposit</p>	<p>Each Bidder will be required to submit a deposit of £10,000.</p> <p>We may require Bidders to increase their deposits to match their Bids during the Auction stage.</p> <p>The deposit, or part of the deposit, may be forfeited if the Bidder breaches any of the auction rules.</p> <p>The deposits of unsuccessful Bidders will be returned to them at the end of the auction, unless forfeited.</p>
<p>Pricing rule</p>	<p>We will determine the licence fee payable by each winning Bidder using a ‘second price’ rule.</p> <p>Where there is only one Valid Bid in the first round the licence fee will be £10,000.</p>
<p>Transparency</p>	<p>There will be an application process for participation in the Award Process, and we will make public the identities of all successful Applicants.</p> <p>At the end of each round, we will notify Bidders of the number of Bidders that made valid Bids in that round.</p>
<p>Prohibitions on Bidder association and collusion</p>	<p>There will be specific rules to prohibit Bidder association and collusion.</p> <p>If separate applications are received from two or more associated organisations, they will be required to disassociate, or withdraw all but one of their applications, in order for any of them to qualify to bid in the Auction.</p>
<p>Unsold Licences</p>	<p>If a Licence remains unsold at the end of the auction, we will choose whatever course of action we consider appropriate at the time, in accordance with our statutory duties.</p>

Our duties and functions

- 1.6 We have powers under the WT Act to grant licences for wireless telegraphy, and to do so through an auction. Our duties in relation to the award of Licences are set out

in the WT Act, and are derived from the requirements of European Union (EU) legislation.

Section 2

The spectrum to be awarded

The spectrum to be awarded and digital switchover

- 2.1 The spectrum we are awarding is within the UHF frequency bands currently used primarily for transmitting terrestrial television. Transmissions in the bands are in the process of switching from analogue to digital – digital switchover (DSO). This process is due to be completed in the UK as a whole by 2012. The so called ‘digital dividend’ is the spectrum that this process will free up for new uses. There are two distinct categories of spectrum in the digital dividend:
- the spectrum that by 2012 will be cleared of television transmissions (the cleared spectrum); and
 - capacity available within the 256 MHz of spectrum that will be used to carry the six DTT multiplexes after DSO (the interleaved spectrum). Not all of this spectrum will be used in any one location for DTT, and in those areas the unused spectrum may be used for other services.
- 2.2 We are concerned in this document with the second category of spectrum. The geographic interleaved awards are so called because we are awarding rights to use interleaved spectrum in specific geographic locations.
- 2.3 Figure 2.1 below shows these different categories of spectrum in the context of the wider use of the UHF Bands IV and V (470-862 MHz). The spectrum in these bands has been planned in 8 MHz channels, with each channel given a number between 21 and 69. For example, channel 21 occupies the frequency range 470-478 MHz.

Figure 2.1 Channel numbers and frequency ranges for UHF Bands IV and V

Channel	21	22	23	24	25	26	27	28	29	30	31	32
Frequency (MHz)	470-478	478-486	486-494	494-502	502-510	510-518	518-526	526-534	534-542	542-550	550-558	558-566
	33	34	35	36	37	38	39	40	41	42	43	44
	566-574	574-582	582-590	590-598	598-606	606-614	614-622	622-630	630-638	638-646	646-654	654-662
	45	46	47	48	49	50	51	52	53	54	55	56
	662-670	670-678	678-686	686-694	694-702	702-710	710-718	718-726	726-734	734-742	742-750	750-758
	57	58	59	60	61	62	63	64	65	66	67	68
	758-766	766-774	774-782	782-790	790-798	798-806	806-814	814-822	822-830	830-838	838-846	846-854
	69											
	854-862											

 Interleaved spectrum	 Currently airport radar - to be included in cleared award	 Interleaved spectrum - to be included in cleared award
 Cleared spectrum	 Currently radio astronomy - to be included in cleared award	 Spectrum currently reserved for PMSE

2.4 Neither channel 30 nor channel 57 is identified in the DSO plan for the transmission, from Wenvoe and Winter Hill respectively, of any of the six existing DTT multiplexes after DSO.

- Television broadcasting at the Winter Hill transmission site will switch from analogue to digital transmissions in the fourth quarter of 2009 (October to December). Channel 57 will be available from the completion of DSO at Winter Hill, but subject to restrictions until DSO has been completed at another transmission site.
- Television broadcasting at the Wenvoe transmission site will switch from analogue to digital transmissions in the first quarter of 2010 (January to March). Transmissions in channel 30 from Wenvoe are currently expected to remain in use for a temporary period for DTT after DSO until mid 2011. We will therefore assign the winner of a licence for Wenvoe in this award a temporary frequency capable of providing coverage equivalent to that of the existing analogue Restricted Television Service Licence (RTSL).

We discuss coverage and transitional arrangements further in paragraphs 2.24 to 2.33 below.

Future availability of the spectrum to be awarded

2.5 DSO is taking place across Europe, and a number of European countries are creating a digital dividend. However, it is likely that many will clear a band of spectrum that comprises all of channels 61-69 (790-862 MHz), whereas the UK's present plan is to clear an upper band of only channels 63-68 (806 -854 MHz). Several respondents to our consultation on the detailed design of the Digital Dividend Review (DDR) cleared award¹ (the cleared consultation) argued that we should replan the UK's digital dividend, to clear all of channels 61-69.

2.6 We are currently considering this alongside a range of other responses that raise complex and important issues. In our consideration, we will focus on what is in the best interests of citizens and consumers. We plan to confirm our next steps later this year. We will update this Memorandum as necessary when more information is available.

2.7 Potential bidders should therefore be aware of the risk that the future availability of the frequencies we are awarding may be affected by international developments. This could materialise in two ways:

- neighbouring countries could seek changes to their use of UHF Bands IV and V in ways that impact on UK use. France has recently announced its intention to clear channels 61 to 69 and that it will enter into bi-lateral co-ordination negotiations to this end. Ireland has not announced its plans but if it also wished to clear channels 61 to 69 further international coordination would probably be required. Both Wenvoe and Winter Hill could be affected by international coordination, in particular with respect to Ireland; and
- the UK could decide or be obliged to align its digital dividend with other European countries. This would mean the UK clearing channels 61 and 62 of DTT and channel 69 of services for programme-making and special events (PMSE).

¹ Digital Dividend Review: 550-630 MHz and 790-854 MHz- consultation on detailed award design, Ofcom, 6 June 2008, <http://www.ofcom.org.uk/consult/condocs/clearedaward/>

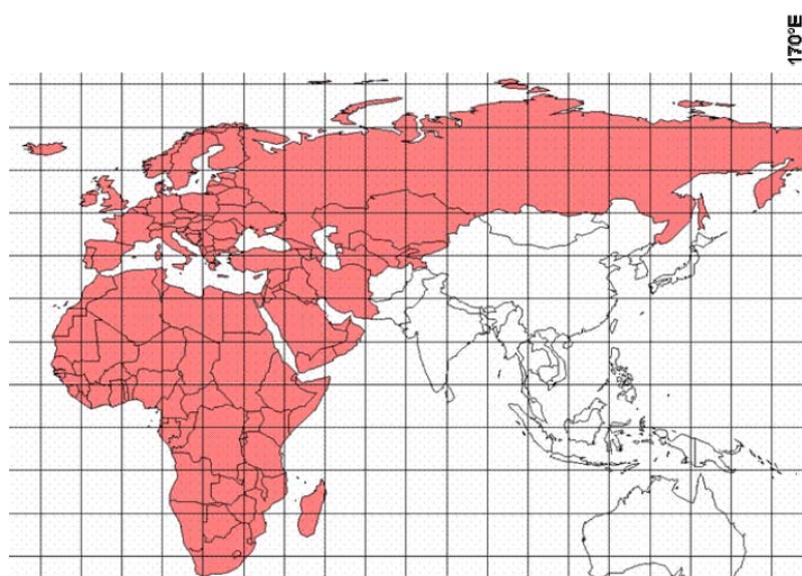
Accommodating these existing uses elsewhere could, in turn, affect the continued availability or coverage of channel 30 at Wenvoe and channel 57 at Winter Hill.

- 2.8 It is not certain that either of these scenarios would necessarily impact on the Lots we are awarding, but we cannot at this stage rule it out. Nevertheless, we considered, in the light of these developments, whether it would be appropriate to hold the first phase awards before these matters had been resolved. We concluded that it would be in the interest of citizens and consumers to go ahead with the awards despite the element of uncertainty. To delay the awards would deny existing local television operators in Manchester and Cardiff the opportunity to obtain spectrum in advance of DSO in order to continue providing their services.
- 2.9 We have undertaken an assessment of whether, if it were no longer possible for the licensee to transmit using the frequencies identified in the Licences, alternative similar frequencies could be found. Based on the information available at present our assessment is that it would be possible to identify such alternative frequencies. Clearly circumstances may change but we consider it likely that suitable alternative frequencies could be identified.
- 2.10 In the circumstances described above, in the first instance, we would of course consult with the relevant Licensee over the alternative courses of action. Our objective would be so far as possible to endeavour to minimise the adverse impact of any such changes on the Licensee. This might include identifying an alternative comparable frequency channel for the Licensee to that described in paragraphs 2.24 – 2.33. We would take into account the views of the Licensee on the suitability of any alternative channel.
- 2.11 Should it be necessary to make changes to the frequency assignments for the Licences to be awarded, we would follow the procedure set out in the WT Act for revoking or varying a licence, described in more detail in paragraphs 3.8 to 3.12 below. Among other things the WT Act allows us to revoke a licence in order to comply with an international obligation. The Licence also allows revocation with the consent of the Licensee.

International frequency allocation and harmonisation

- 2.12 The UK's interleaved spectrum is within the frequency band 470-854 MHz, allocated on a primary basis to broadcasting services as specified in Article 5 of the International Telecommunication Union (ITU) Radio Regulations for Region 1 (covering Europe, the Middle East and Africa). The 790-862 MHz band is also allocated to fixed services and, applicable to the UK and neighbouring countries, mobile services on a primary basis as specified in footnote 5.316 of the Radio Regulations.
- 2.13 This spectrum is also subject to an ITU Regional Agreement following the Regional Radiocommunications Conference 2006 (RRC-06), held in Geneva, which created an "all-digital" terrestrial broadcast services plan (known as Geneva 2006 – GE06) across those parts of Region 1, as defined in No. 5.3 of the Radio Regulations, situated to the west of meridian 170° E and to the north of parallel 40° S, except the territories of Mongolia and the Islamic Republic of Iran.

Figure 2.2 GE06 countries



Source: ITU

- 2.14 At RRC-06, many countries, including the UK and its neighbours, signed declaration 42 to the Final Acts. This states that the administration may use its GE06 digital Plan entries not just for broadcasting but also for other terrestrial applications with characteristics that may be different from those appearing in the Plan within the envelope of their digital Plan entries under the provisions of GE06 Agreement and the Radio Regulations, taking into account any relevant bilateral agreements.
- 2.15 The use of GE06 allocations in this band is also subject to bilateral coordination agreements with Belgium, France, Ireland and the Netherlands that limit the outgoing interference from each country's GE06 allocation. These agreements therefore define the expected incoming interference from the UK's neighbouring countries.
- 2.16 The Lots to be awarded are currently not recorded in the GE06 plan or in any bilateral coordination agreements. Therefore transmissions using this spectrum will be required to operate below the exported interference GE06 coordination threshold field strength limits of 21, 23 or 25 dB μ V/m² at the neighbouring country's border depending upon frequency.
- 2.17 The Lots' antenna template has been produced to protect the UK's DTT network after DSO and to respect international agreements. Therefore, it takes into account the GE06 coordination threshold.
- 2.18 DSO is under way across Europe, and this, coupled with the desire for increased broadcasting capacity and the realisation of a digital dividend in many countries, will result in intense use of UHF Band IV and V. Bilateral discussion is carried out on the basis of equitable access to the spectrum. Therefore, coordination requests for a higher level of outgoing interference on one assignment may be negotiated with a request to accept a higher incoming interference level on a different frequency, potentially impacting coverage in the UK for DTT or other services. For this reason, the coordination process can be protracted and a successful outcome cannot be

² 21 dB μ V/m Band IV (470-582 MHz), 23 dB μ V/m Band V (582-718 MHz) and 25 dB μ V/m Band V (718-862 MHz), as defined in Appendix 1 to Section 1 of the Final Acts of RRC-06.

guaranteed. We will, solely at our discretion, initiate any post-award request for international coordination to achieve higher levels of outgoing interference.

- 2.19 All aspects of international arrangements are subject to change from time to time. Licensees will be required to ensure that their use of spectrum is consistent with the UK's international obligations and the licences are likely to be varied where this is required in order to implement an international obligation. Interested parties should note that we cannot offer any protection to a Licensee from spectrum users in neighbouring countries operating in accordance with international agreements.
- 2.20 Interested parties should note that the institutions of the EU have important powers and responsibilities regarding spectrum management. The EU regulatory framework for electronic communications includes provisions on the use of spectrum. This framework is set out in detail in legislation that was adopted by the European Parliament and the Council of Ministers in 2002³. This was incorporated into UK law primarily by the Communications Act 2003⁴. The European Commission published proposals for changes to this framework on 13 November 2007⁵. Further information on this review is given below in paragraphs 5.72 to 5.73.
- 2.21 It should also be noted that considerable work has been carried out by the European Conference of Postal and Telecommunications Administrations (CEPT) in response to Commission mandates on the digital dividend. This work is still ongoing through CEPT's Electronic Communications Committee (ECC) and its subgroups PT1, TG4 and WGSE SE42⁶. These subgroups have been investigating the possible harmonisation of a mobile services sub-band on a non-mandatory basis that could have consequential effect on the future availability and/or quality of the UK's interleaved spectrum.
- 2.22 Under the Radio Spectrum Decision⁷, the Commission can adopt Decisions governing spectrum use. This can be done in the interests of ensuring effective policy coordination and, where appropriate, harmonised conditions for spectrum use in the internal market. These Decisions are binding on EU Member States and can only be adopted by the Commission with the support of a qualified majority of Member States convened in the form of the Radio Spectrum Committee (RSC). We represent the UK at the RSC under direction by the Government.
- 2.23 Interested parties should note that in the event of future EU legislation affecting the Lots to be awarded, we may be required to change the terms and conditions of the Licences.

Lots at Wenvoe and Winter Hill

- 2.24 The spectrum we are awarding is at the locations and in the frequency channels and ranges set out in Table 2.1 below. Each Lot to be awarded consists of 8 MHz and is geographically limited as per the technical parameters detailed in paragraphs 2.25 to 2.33 below.

³ http://ec.europa.eu/information_society/policy/ecommm/current/index_en.htm.

⁴ www.opsi.gov.uk/acts/acts2003/pdf/ukpga_20030021_en.pdf .

⁵ http://ec.europa.eu/information_society/policy/ecommm/tomorrow/reform/index_en.htm

⁶ Information on CEPT and ECC groups is available at <http://www.ero.dk/>.

⁷ http://eur-lex.europa.eu/LexUriServ/site/en/oj/2002/l_108/l_10820020424en00010006.pdf.

Table 2.1 Lots to be awarded

	Transmission site	Frequency channel (range)	Area
Lot 1	Wenvoe	Channel 30 (542-550 MHz)	Cardiff area
Lot 2	Winter Hill	Channel 57 (758-766 MHz)	Manchester area

Geographic boundaries of the Licences – Wenvoe

- 2.25 The channel 30 lot at Wenvoe is subject to a transitional arrangement. During DSO, it is planned that some transmitters will operate on temporary frequencies to avoid interference occurring to viewers in other parts of the UK where analogue services have not yet been switched off. The Wenvoe transmitter is due to switch between January and March 2010⁸. However, it is anticipated that channel 30 will be occupied by a national DTT multiplex until mid-2011 and will therefore be unavailable until after that time.
- 2.26 A temporary frequency channel 55 will therefore be made available to the Winning Bidder during the transition period from DSO at Wenvoe in early 2010 until the time when channel 30 becomes available after mid-2011. The transitional arrangement will provide a narrower beam using a temporary frequency towards Cardiff, and have the effect of restricting the coverage from Wenvoe.

Transitional arrangement (early 2010 to mid 2011)

- 2.27 The details of permissible emissions are given in Table 2.2 below. Details of the likely coverage that could be achieved by a service meeting these technical parameters are given in Figure 2.4 and Table 2.3 below.

Table 2.2 Wenvoe transitional transmission characteristics

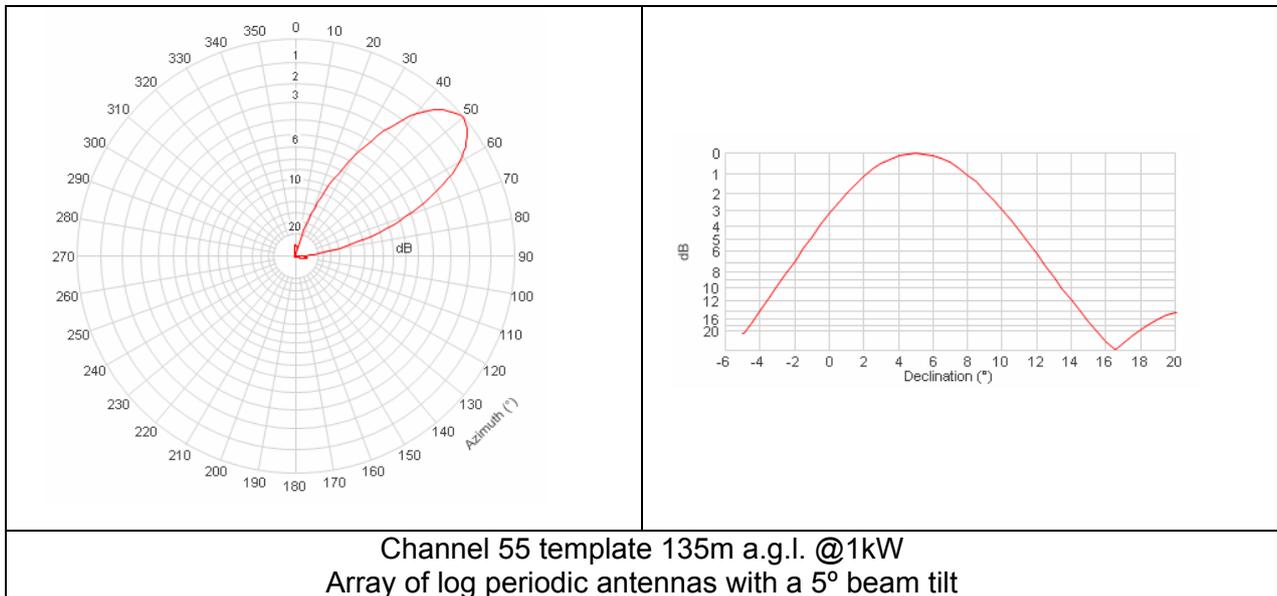
Site name	Wenvoe
National Grid Reference	ST110742
Antenna height above ground level	135m
Antenna pattern	See Figure 2.3 below
Indicative antenna type	A two bay of four stacked log periodic antennas separated horizontally; antenna with 5° degrees of beam tilt oriented at 50° ETN
Channel (frequency)	55 (742-750MHz)
Maximum effective radiated power	1 kW
Polarisation	Horizontal

⁸ The exact dates when DSO will occur at the Wenvoe transmitter will be confirmed by Digital UK during 2009.

Spectral mask

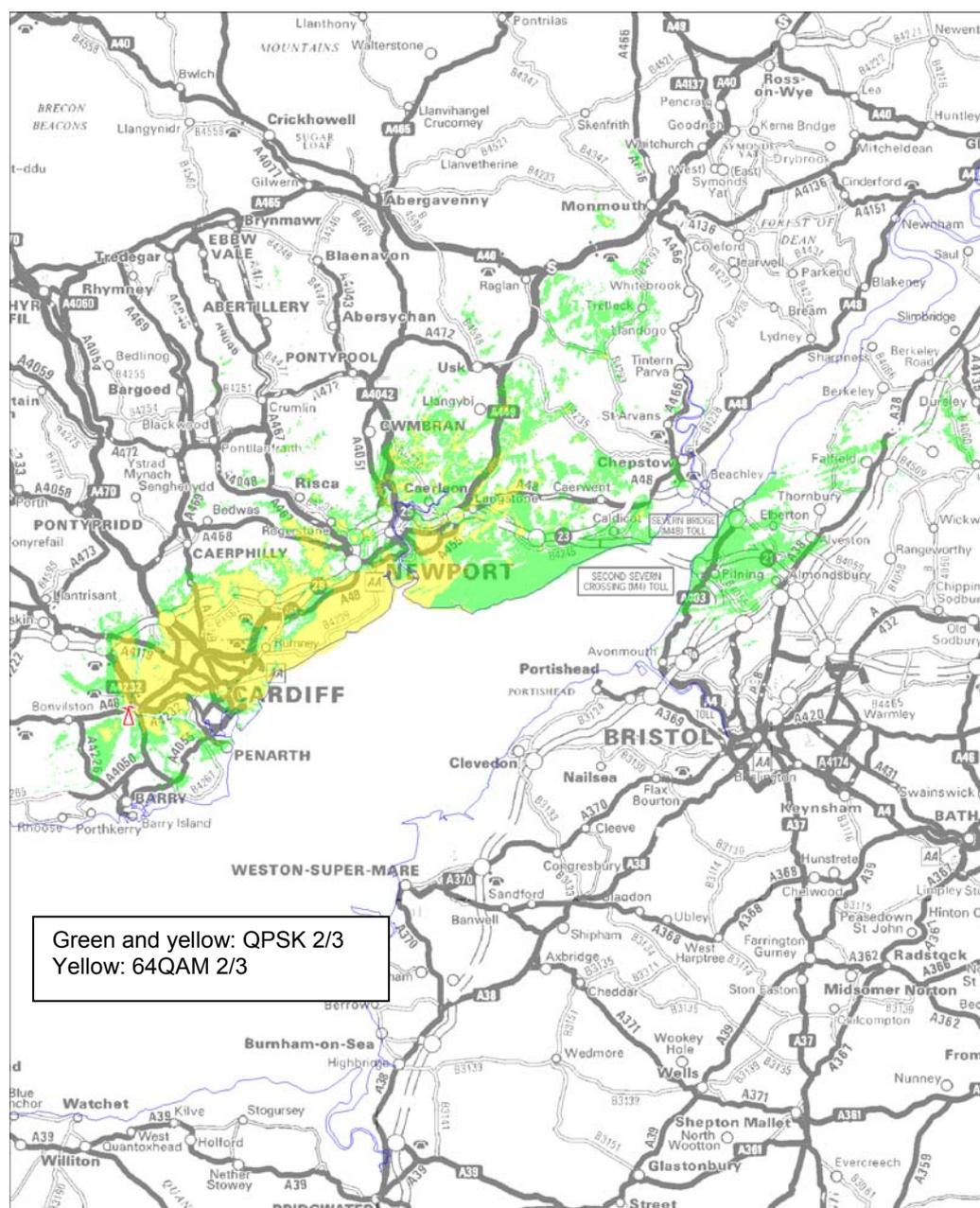
As defined in Interface Requirement (IR) 2022⁹

Figure 2.3 Wenvoe transitional antenna template



⁹ http://www.ofcom.org.uk/radiocomms/ifi/tech/interface_req/ir2022.pdf.

Figure 2.4 Wenvoe coverage – transitional arrangement



The coverage indicated is based on predictions only and may not match what can be achieved in reality, in particular, the predictions do not guarantee that the service can be received at all points within the area shown. Predictions are based on the transmission parameters specified in the licence; an average threshold for generally acceptable reception with a good quality TV aerial; and an assumption for incoming interference from other transmitter stations. Any variance in the transmission, reception or interference assumptions will in turn vary the predicted coverage. Reception quality can differ rapidly with changing location to a more detailed extent than is shown on the coverage map.

Table 2.3 Wenvoe gross population coverage figures - transitional (estimated)

Service		Households covered 70% locations	Households covered within the analogue preferred service area (APSA) 70% locations	Households covered within the digital preferred service area (DPSA) 70% locations
64QAM	UK	130,296	130,162	127,683
	Wales	130,197	130,155	127,586
QPSK	UK	179,519	172,286	165,812
	Wales	173,908	172,225	162,434

Final arrangement (from mid 2011)

2.28 The details of permissible emissions are given in Table 2.4 below. Details of the likely coverage that could be achieved by a service meeting these technical parameters are given in Figure 2.6 and Table 2.5 below.

Table 2.4 Wenvoe final transmission characteristics

Site name	Wenvoe
National Grid Reference	ST110742
Antenna height above ground level	135m
Antenna pattern	See Figure 2.5 below
Indicative antenna type	Array of four stacked log periodic antennas with 5° beam tilt achieving a 4 dB ERP reduction at the horizon.
Channel (frequency)	Channel 30 (542-550 MHz)
Maximum effective radiated power	1 kW
Polarisation	Horizontal
Spectral mask	As defined in IR2022

Figure 2.5 Wenvoe final antenna template

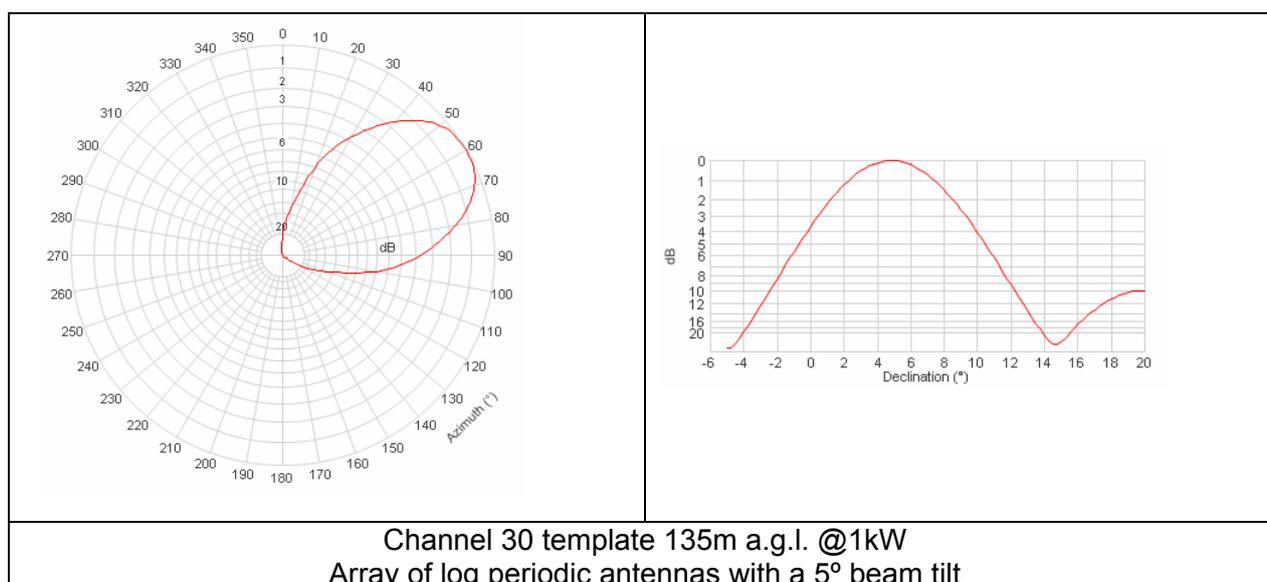
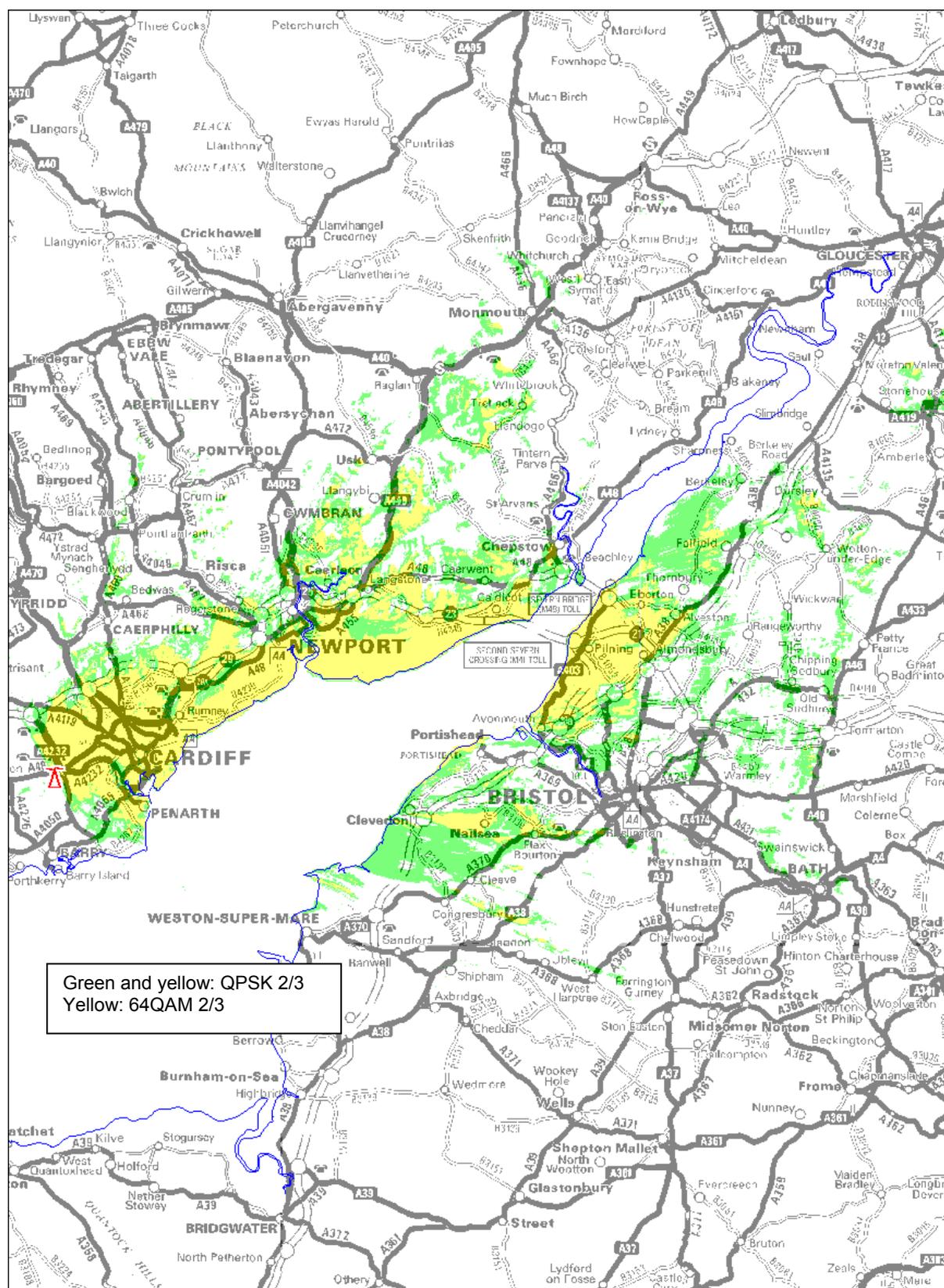


Figure 2.6 Wenvoe coverage – final arrangement



The coverage indicated is based on predictions only and may not match what can be achieved in reality, in particular, the predictions do not guarantee that the service can be received at all points within the area shown. Predictions are based on the transmission parameters specified in the licence;

an average threshold for generally acceptable reception with a good quality TV aerial; and an assumption for incoming interference from other transmitter stations. Any variance in the transmission, reception or interference assumptions will in turn vary the predicted coverage. Reception quality can differ rapidly with changing location to a more detailed extent than is shown on the coverage map.

Table 2.5 Wenvoe gross population coverage figures – final (estimated)

Service		Households covered 70% locations	Households covered within APSA 70% locations	Households covered within DPSSA 70% locations
64QAM	UK	180,645	161,290	168,054
	Wales	161,082	160,798	155,772
QPSK	UK	279,222	196,314	206,760
	Wales	198,525	195,266	178,846

Geographic boundaries of the Licences – Winter Hill

- 2.29 Use of channel 57 at Winter Hill will introduce a new frequency interaction between Winter Hill and the existing pre-DSO Multiplex D service from The Wrekin transmission site in the ITV Central region. This interaction disappears when DSO occurs at The Wrekin and Multiplex D moves to another channel.
- 2.30 It will be necessary to put in place a restriction on the use of channel 57 from Winter Hill to protect Multiplex D viewers during the period between DSO at Winter Hill and DSO at The Wrekin. DSO is due to happen at Winter Hill in the fourth quarter of 2009 and at The Wrekin in 2011.
- 2.31 Two technical arrangements are detailed below – one for the transitional period between DSO at Winter Hill and DSO at The Wrekin, the other for the final arrangement that can be adopted when DSO has completed at The Wrekin. The transitional arrangement will provide a narrower beam towards Manchester and have the effect of restricting the coverage from Winter Hill.

Transitional arrangement (late 2009 to 2011)

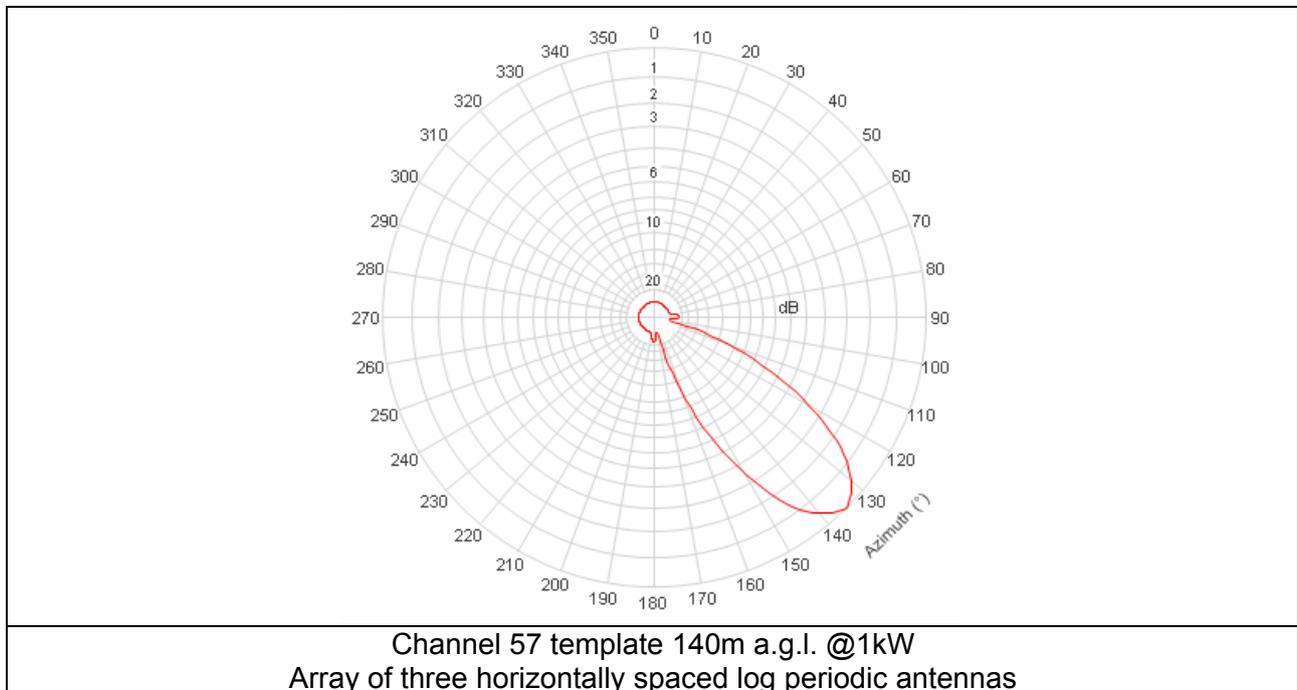
- 2.32 The details of permissible emissions during the transition period between digital switchover at Winter Hill and at The Wrekin are given in Table 2.6 below. Details of the likely coverage that could be achieved by a service meeting these technical parameters are given in Figure 2.8 and Table 2.7 below

Table 2.6 Winter Hill transitional transmission characteristics

Site name	Winter Hill
National Grid Reference	SD660144
Antenna height above ground level	140m
Antenna pattern	See Figure 2.7 below
Indicative antenna type	Three log periodic antennas, horizontally spaced
Channel (frequency)	Channel 57 (758-766 MHz)
Maximum effective radiated power	1 kW

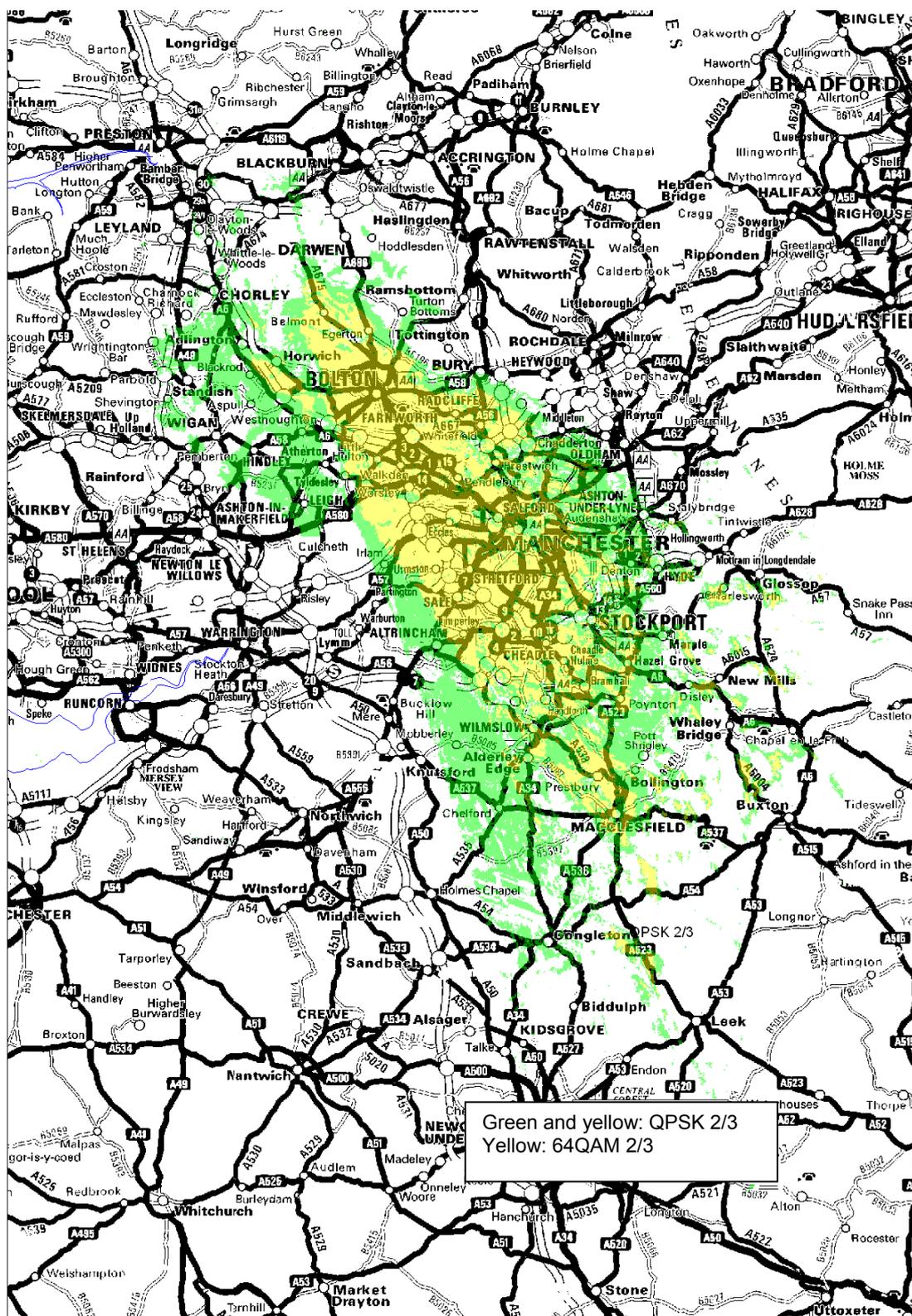
Polarisation	Horizontal
Spectral mask	As defined in IR2022 ¹⁰

Figure 2.7 Winter Hill transitional antenna template



¹⁰ UK Interface Requirement 2022, Broadcast transmitters operating in frequency bands administered by Ofcom, 98/34/EC Notification number: 2007/124/UK, Ofcom, July 2007.
http://www.ofcom.org.uk/radiocomms/ifi/tech/interface_req/ir2022.pdf

Figure 2.8 Winter Hill coverage – transitional arrangement



The coverage indicated is based on predictions only and may not match what can be achieved in reality, in particular, the predictions do not guarantee that the service can be received at all points within the area shown. Predictions are based on the transmission parameters specified in the licence; an average threshold for generally acceptable reception with a good quality TV aerial; and an assumption for incoming interference from other transmitter stations. Any variance in the

transmission, reception or interference assumptions will in turn vary the predicted coverage. Reception quality can differ rapidly with changing location to a more detailed extent than is shown on the coverage map.

Table 2.7 Winter Hill gross population coverage figures – transitional (estimated)

Service	Households covered 70% locations	Households covered within APSA 70% locations	Households covered within DPSSA 70% locations
64QAM	521,335	518,259	521,335
QPSK	834,492	825,302	834,007

Final arrangement (from 2011)

2.33 The details of permissible emissions once DSO has completed at The Wrekin are given in Table 2.8 below. Details of the likely coverage that could be achieved by a service meeting these technical parameters are given in Figure 2.10 and Table 2.9 below

Table 2.8 Winter Hill final transmission characteristics

Site name	Winter Hill
National Grid Reference	SD660144
Antenna height above ground level	140m
Antenna pattern	See Figure 2.9 below
Indicative antenna type	Four stacked log periodic antennas, with 5° beam tilt to achieve a 4 dB power reduction at the horizon.
Channel (frequency)	Channel 57 (758-766 MHz)
Maximum effective radiated power	1 kW
Polarisation	Horizontal
Spectral mask	As defined in IR2022 ¹¹

¹¹ UK Interface Requirement 2022, Broadcast transmitters operating in frequency bands administered by Ofcom, 98/34/EC Notification number: 2007/124/UK, Ofcom, July 2007.
http://www.ofcom.org.uk/radiocomms/ifi/tech/interface_req/ir2022.pdf

Figure 2.9 Winter Hill final antenna template

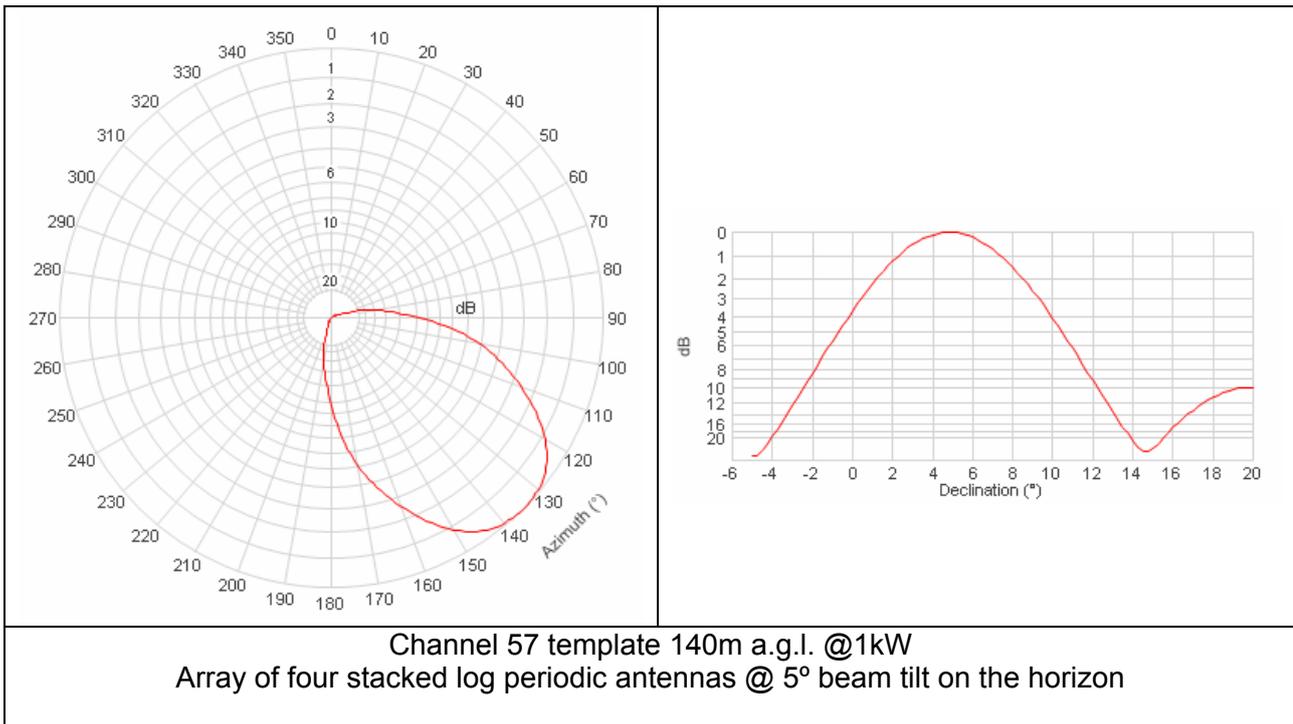
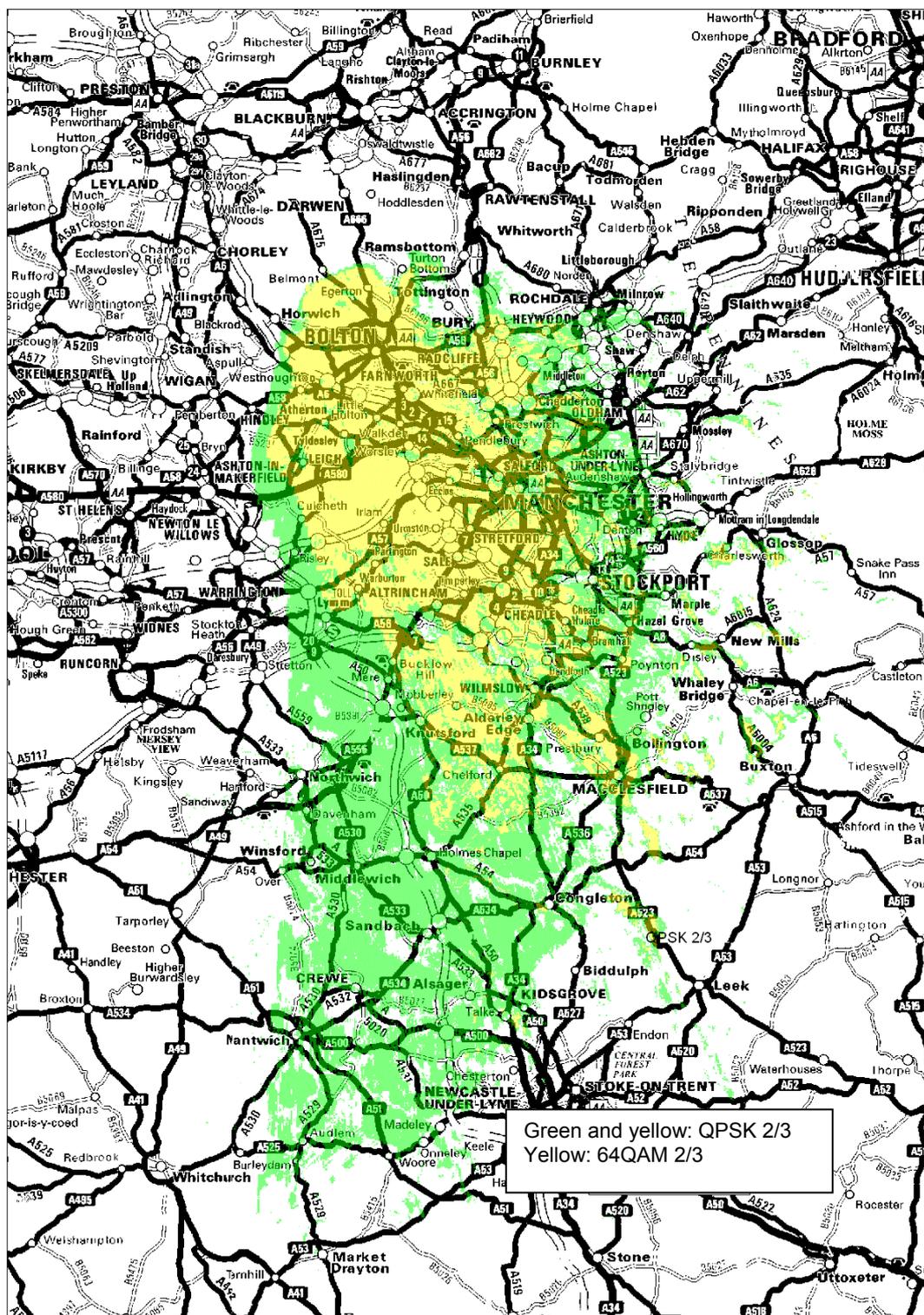


Figure 2.10 Winter Hill coverage – final arrangement



The coverage indicated is based on predictions only and may not match what can be achieved in reality, in particular, the predictions do not guarantee that the service can be received at all points within the area shown. Predictions are based on the transmission parameters specified in the licence; an average threshold for generally acceptable reception with a good quality TV aerial; and an assumption for incoming interference from other transmitter stations. Any variance in the transmission, reception or interference assumptions will in turn vary the predicted coverage.

Award of licences in the frequency bands 542 to 550 MHz and 758 to 766 MHz covering Cardiff and Manchester:
Information Memorandum

Reception quality can differ rapidly with changing location to a more detailed extent than is shown on the coverage map.

Table 2.9 Winter Hill gross population coverage figures – final (estimated)

Service	Households covered 70% locations	Households covered within APSA	Households covered within DPSSA
64QAM	596,099	593,477	596,099
QPSK	976,044	966,128	974,738

Section 3

The Licences

Introduction

- 3.1 This section provides an overview of the rights and obligations conferred by the Licences that will be awarded to the winning Bidders.
- 3.2 For the avoidance of doubt the Licences will not guarantee exclusive use of the spectrum awarded. In the future we may grant additional authorisations to allow the use of all, or part, of the spectrum, including frequency channels that could cover Cardiff or Manchester. We would develop the conditions of use under any such additional authorisations in order to manage the risk of harmful interference and we would consult on these conditions.
- 3.3 The Licences will contain only those technology and usage restrictions that are, in our view proportionate and necessary for spectrum management reasons to manage the risk of harmful interference and to ensure compliance with our statutory duties and international obligations. Bidders should note, however, that the services that a Licensee intends to offer may be constrained by regulation of downstream services (at retail or wholesale level) such as the General Conditions of Entitlement under the Communications Act 2003 and other legislation. Bidders should seek their own advice in this regard.
- 3.4 The Licence for each of the available Lots will be awarded under the WT Act. Each Licence grants the Licensee the right to establish, install and use radio transmitters in accordance with specific technical parameters set out in the Licence (see paragraph 3.19), for an indefinite term (see paragraph 3.8). The Licence also sets out the conditions that apply to the Licensee in respect of:
- the circumstances in which we may revoke the Licence (see paragraph 3.10)
 - Licence variation (see paragraphs 3.11 to 3.12);
 - fees (see paragraphs 3.17 to 3.18); and
 - modification, restriction and closedown (see paragraph 3.25).

We explain below in paragraphs 3.13 to 3.14 how spectrum trading applies to the Licence.

- 3.5 A template Licence for each Lot is available at annex 1.
- 3.6 The Licences can be used to provide television multiplex services¹² as defined in section 241 of the Communications Act 2003. The Licences will contain non-technical licence conditions specific to this use, including:
- restrictions on ownership (see paragraphs 3.31 to 3.32);

¹² In summary, a television multiplex service consists of the packaging together of two or more services in digital form, where at least one service is a television channel, for broadcasting to the general public.

- an obligation to ensure that any logical channel numbers (LCNs) and network and service identifiers used in providing a television or radio multiplex service do not conflict with existing multiplex operators, in order to facilitate interoperability (see paragraphs 3.33 to 3.39).
- 3.7 The technical parameters in each Licence will be suitable for television multiplex services. If Licensees wish to use a Licence to provide other services, we will consider varying the Licence accordingly. The procedure for varying a Licence is set out in paragraphs 3.11 to 3.12 below.

Term, revocation and variation

- 3.8 Each Licence will have an indefinite term and will continue in force from the date of grant until revoked by us or surrendered by the Licensee.
- 3.9 During the period from the date of grant of the Licence until 30 October 2026 (the “Initial Term”), we will not revoke the Licence for spectrum management reasons. We will be able to revoke the Licence for spectrum management reasons from 30 October 2026, provided we have given the Licensee five years’ notice.
- 3.10 The Licence can be revoked, including during the Initial Term, in the following circumstances:
- at the request or with the consent of the Licensee;
 - for non-payment or late payment of the relevant Licence Fee;
 - if there has been a breach of any of the terms of the Licence;
 - if the Licensee has not complied with any requirement of any relevant Trading Regulations;
 - if the Licensee has not complied with certain requirements of the Regulations under which the Licence was awarded;
 - if it appears to be requisite or necessary or expedient to do so in the interests of national security or for the purposes of complying with an international obligation of the UK;
 - if it appears requisite or necessary or expedient to do so for the purpose of complying with a direction by the Secretary of State to us under section 5 of the Communications Act 2003 (‘C Act’) or section 5 of the WT Act; or
- 3.11 Where we propose to vary or revoke a Licence, we must follow the procedure in both the relevant Licence (see Conditions 3 and 4 of the template Licence provided at annex 1) and paragraph 7 of Schedule 1 to the WT Act. The notice under the WT Act must state the reasons for the proposed variation or revocation and specify a period during which the Licensee may make representations, or where the notice relates to a failure to observe licence conditions, meet those licence conditions.
- 3.12 If a Licensee wants us to vary its Licence, for example to change the technical parameters of the Licence, it must submit to us a written request. The request must contain sufficient information about the requested change and the reason for the change to enable us to consider it. We may require further information from the

Licensee in order to be able to consider the request. A particular issue which we will consider is whether the proposed change would cause harmful interference or degradation to other services. We provide guidance on our website on the process for varying licences – see <http://www.ofcom.org.uk/radiocomms/ifi/trading/libguide/>.

Spectrum trading

- 3.13 A Licensee cannot assign its Licence to another party, but it may transfer the rights and obligations to another person under the spectrum trading regime. We started the implementation of spectrum trading for selected licence classes in 2004, through the Wireless Telegraphy (Spectrum Trading) Regulations 2004.¹³ The changes, described in our Spectrum Trading Statement¹⁴, introduced the possibility for WT Act Licensees in specific classes to carry out full or partial transfers of the rights and obligations arising under a WT Act licence. A summary of the different options for spectrum trading by means of such transfers are set out in Table 3.1 below.

Table 3.1 Options for spectrum trading

<i>Type of transfer</i>	<i>Summary</i>
Outright total transfers	The rights and obligations being transferred are transferred in their entirety from one party to another. Thus, the original licensee (who traded the spectrum) no longer has any rights to use the traded spectrum.
Concurrent total transfers	All of the rights and obligations being transferred are transferred under a licence to a third party, resulting in a concurrent holding of those rights and obligations by the transferor and the transferee(s).
Outright partial transfers	One party transfers some of the rights and obligations arising under a licence to a third party.
Concurrent partial transfers	One party transfers some of the rights and obligations arising under a licence to a third party which results in a concurrent holding of those partial rights and obligations by the transferor and the transferee(s).

- 3.14 We are proposing to amend the Wireless Telegraphy (Spectrum Trading) Regulations 2004 to allow all these types of transfer in respect of the Licences to be awarded. The draft amendments are set out in a Notice of our proposal to make regulations in connection with the first phase awards that is available on our website.¹⁵
- 3.15 We provide guidance on our website on the spectrum trading process – see <http://www.ofcom.org.uk/radiocomms/ifi/trading/>.

¹³ <http://www.opsi.gov.uk/si/si2004/20043154.htm>

¹⁴ A statement on spectrum trading implementation in 2004 and beyond, Ofcom, 6 August 2004. http://www.ofcom.org.uk/consult/condocs/spec_trad/statement/

¹⁵ <http://www.ofcom.org.uk/radiocomms/ddr/>

Changes to Licensee's details

- 3.16 The Licensee must give prior notice to us in writing of any proposed changes to the Licensee's name and address.

Licence fees

- 3.17 In respect of each Licence, the Licence Fee for the Initial Term will be determined through the Award Process (see paragraphs 4.42 to 4.50). We will deduct the Licence Fee from that Winning Bidder's Deposit (unless the Licence Fee exceeds that Licensee's Deposit in which case the relevant Winning Bidder will be required to pay us the shortfall before we grant the Licence) in accordance with the Regulations.
- 3.18 After the Initial Term, we may apply annual fees using AIP. However, the nature of any such fees will depend on the application of our statutory duties in these particular circumstances, our general approach to applying fees for the use of spectrum at that time and how that general approach relates to the Licences.

Radio equipment use

- 3.19 Licences will contain the minimum necessary restrictions on the permitted use of the spectrum to avoid harmful interference and to ensure compliance with our statutory duties and international obligations. Section 2 of this Memorandum describes the available spectrum and provides an indication of the possible coverage of each Lot.
- 3.20 The technical conditions included in the Licence will be suitable for digital terrestrial television transmissions. To use the licensed spectrum for any other purpose will require a variation of the licence. The procedure for considering variations is set out above in paragraph 3.12. The technical parameters for each Lot including the transitional arrangements are set out in Section 2.

Permitted frequencies and other technical conditions

- 3.21 The Licences will set out the specification of permitted frequencies, maximum radiated power, transmit antenna template, polarisation and the height of transmit antenna on the mast. The expected specification of permitted frequencies for each Lot is available in Schedule 1 to each template Licence at annex 1.

Interface Requirements

- 3.22 The Licensee must comply with Interface Requirements to protect other users of the spectrum. The interface requirement specified is IR 2022¹⁶, which applies to all broadcast transmitters operating in frequency bands that we administer.

Cross-border coordination

- 3.23 The Lots have been planned to fit within the UK Planning model for DTT, which includes international coordination thresholds. The Licences will not allow the coordination thresholds to be exceeded. For further information about international frequency allocation and harmonisation relevant to the geographic interleaved awards see paragraphs 2.12 to 2.23.

¹⁶ UK Interface Requirement 2022, Broadcast transmitters operating in frequency bands administered by Ofcom, 98/34/EC Notification number: 2007/124/UK, Ofcom, July 2007.
http://www.ofcom.org.uk/radiocomms/ifi/tech/interface_req/ir2022.pdf

Access and inspection

- 3.24 Licensees will be required to permit any person whom we authorise to have access to and to inspect the radio equipment specified in the Licence at all reasonable times, to ensure that the Licensee is using the Radio Equipment in accordance with the conditions of the Licence. The Licensee must also permit access at any time to the radio equipment specified in the Licence to any person whom we authorise when an urgent situation arises.

Modification, restriction and closedown

- 3.25 We may require the Radio Equipment or any part of it to be modified, restricted in use or temporarily or permanently closed down if:
- a Licensee has breached the terms of its Licence; and/or
 - use of Radio Equipment is or may be causing or contributing interference to the operation of other authorised Radio Equipment; and/or
 - it appears to be requisite or expedient to do so in the event of a national or local state of emergency. We may only exercise this power after a written notice has been served on the Licensee or a general notice applicable to holders of a named class of Licence has been published.

Provision of information

- 3.26 The Licensee will be required to keep records of certain information relating to the technical parameters of the equipment and the use of the spectrum. We can request those records from the Licensee and may publish the information, including in aggregated form.
- 3.27 The type of information Licensees must keep includes records of the location of the radio equipment, the licensed frequencies, the estimated number of receivers (or subscribers, depending on the service provided) of the service, and the extent to which the spectrum is being used. For the licences awarded as a result of this auction, we expect most of this information to be in the public domain at the time of award as the technical parameters, for example, are set out in the Licences themselves.
- 3.28 We may request some or all of this information from time to time, but would not generally expect to do so more than once a year.
- 3.29 The purpose of collecting this information is to allow us to carry out our regulatory duties in relation to spectrum management. Publishing information about spectrum holdings and use is intended, for example, to facilitate the valuation of spectrum and spectrum trading. When we request information from licensees under this condition, we will consider the burden this places on licensees, having regard to regulatory best practice and our statutory duties.
- 3.30 Interested parties should note that we are considering more generally the issue of provision of spectrum information and data disclosure and are planning to publish a consultation document. The outcome of this process may lead to proposals for changes that may affect the information we collect and publish on the use of spectrum and associated radio equipment.

Conditions specific to television multiplex services

Ownership

- 3.31 Where the Licensee uses the Licence to provide a television or radio multiplex service, it must comply with specific restrictions on the holding of the Licence. It is a condition of the Licence that the following persons cannot provide a television multiplex service:
- a) a local authority;
 - b) a political body;
 - c) a religious body;
 - d) persons who in our opinion are subject to undue influence by a local authority, or a political body such as to act against the public interest; and
 - e) any body controlled by a person falling within the categories (a) to (c) above.

The Licensee will be obliged, on reasonable request, to provide information about ownership, and will be required to notify us of changes to its ownership, in order to allow us to monitor compliance with these restrictions.

- 3.32 The ownership restrictions are not intended to prevent Licensees from seeking funding for their service from public bodies, including local authorities. It is the responsibility of the applicant to ensure that their ownership and/or funding arrangements do not put them in breach of any of the conditions of the Licence, or other relevant legislation.

Interoperability

- 3.33 The DTT platform consists of a number of separate operators who cooperate to ensure that the platform offers a seamless and consistent service to viewers. New television multiplex operators will need to co-operate with existing operators with the dual aim of ensuring that there is no disruption to viewers of the existing multiplexes and that new services are compatible with existing technical arrangements.
- 3.34 The high level requirements under which the existing television multiplex operators co-ordinate their operations are set out in their licence conditions which require compliance with our Television Technical Performance Code¹⁷ and the Reference Parameters for Digital Terrestrial Television Transmissions in the United Kingdom¹⁸. More detailed guidance is provided in Digital Terrestrial Television – Requirements for Interoperability (also called the D-Book), a publication maintained by the Digital TV Group¹⁹, an industry body of broadcasters, manufacturers and transmission companies. The D-Book is only available to members (further information is available in annex 3).

¹⁷ http://www.ofcom.org.uk/tv/ifi/tech/codes_guidance/tv_tech_platform_code.pdf.

¹⁸ http://www.ofcom.org.uk/tv/ifi/tech/codes_guidance/dttt_uk2.pdf

¹⁹ <http://www.dtg.org.uk/>

- 3.35 Interoperability between new and existing DTT services is highly desirable, and we consider that there are strong commercial incentives for new service providers to adopt technical standards compatible with the large number of existing receivers and to interoperate with existing television multiplexes. We judge that the presence of these incentives removes the need for formal technical interoperability requirements in most areas. Licensees will therefore be free in their choice of technical parameters such as signal type, mode and video/audio encoding.
- 3.36 However, there are two areas where co-ordination is particularly important due to the risk of disruption to other DTT services - LCNs and the labelling of transport stream components. Operators of new services will therefore be required as a licence condition to cooperate with the operators of other compatible services to ensure that there is no conflict in the numbering that each uses. Duplication of numbers by different operators could otherwise result in viewers' receivers behaving unreliably and losing reception of some services. The existing multiplex operators have established an organisation, DTT Multiplex Operators Limited (DMOL)²⁰ through which they cooperate on matters of cross-platform interoperability.
- 3.37 There are further options for interoperability, all of which will enhance compatibility of the new service with existing receivers and help achieve a good service for viewers. For example, the existing television multiplex operators provide and cross-carry (i.e. share) information on the services carried on all multiplexes broadcasting from the same transmitter. This information is used to populate the 'Freeview' electronic programme guide (EPG) among other things. They use a central service information (SI) collator, which is managed by DMOL, to share the information on different multiplexes. New operators may wish to cooperate with existing multiplex operators for this service.
- 3.38 Existing television multiplex operators are also subject to some technical requirements, for the transmission and encoding of the multiplex, its video stream and other interactive content. Although a new operator is not required to use these standards for its services, it should keep in mind that existing receivers have been designed to receive services using these standards.
- 3.39 Further detailed information on interoperability and the arrangements put in place by the existing DTT multiplex operators may be found in annex 2.

²⁰ <http://www.dmol.co.uk>

Section 4

The award process

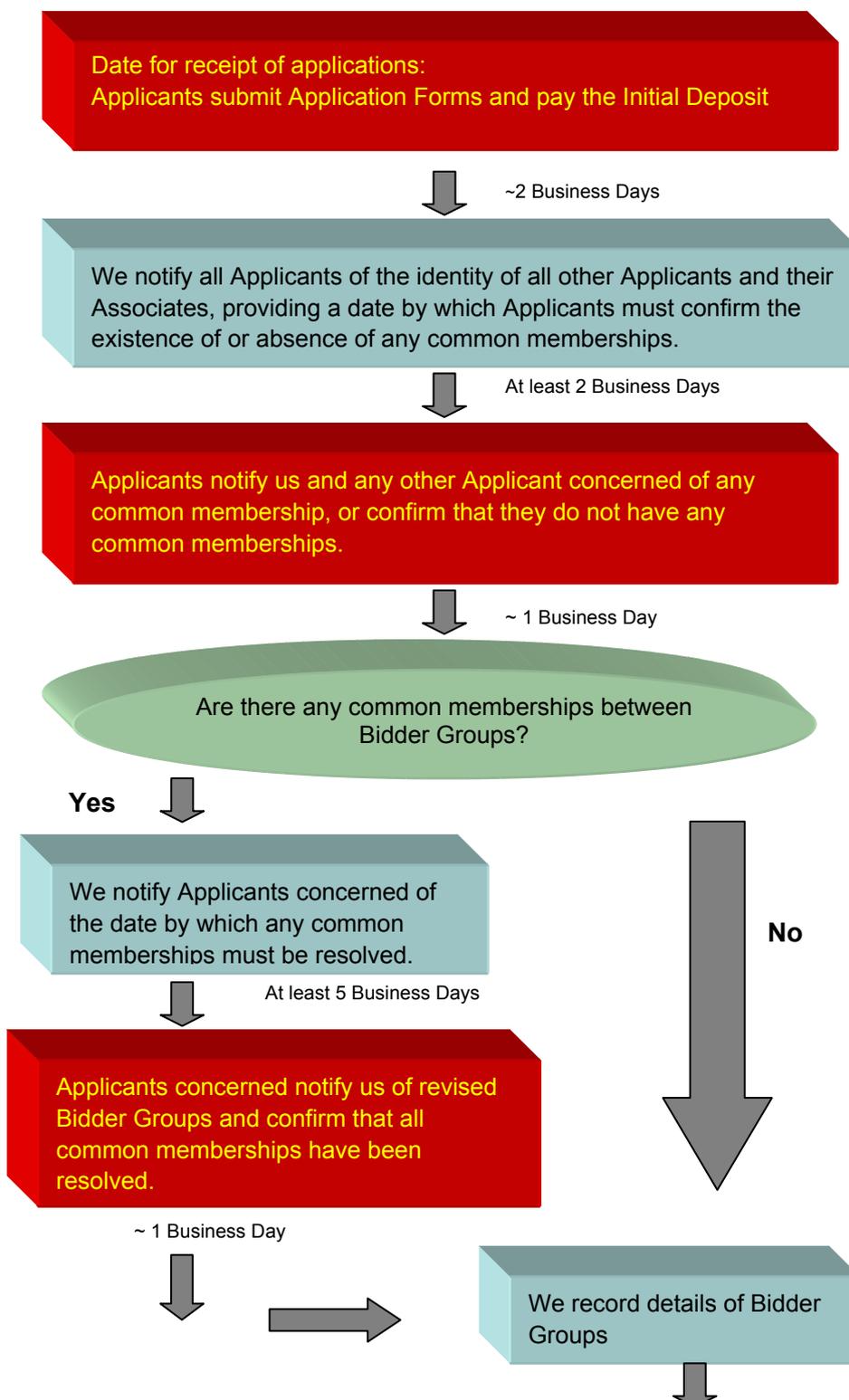
Introduction

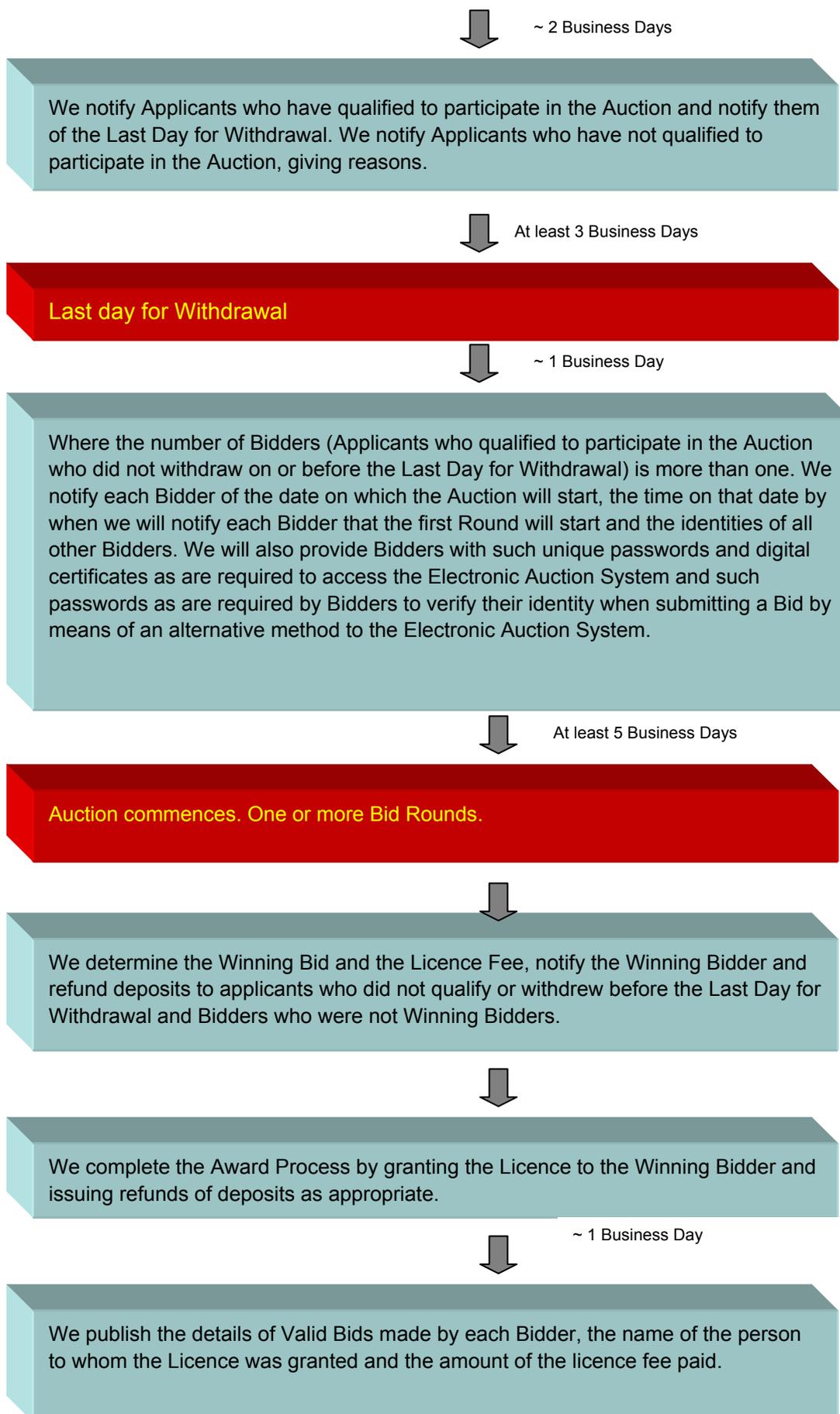
- 4.1 We are planning to award in early 2009 a Licence for use of an 8 MHz channel of interleaved spectrum at each of two transmission sites – Wenvoe and Winter Hill. This section describes the award process.
- 4.2 There will be a separate award for each licence, but we propose to hold the award processes concurrently. We would like to streamline the administrative side of the awards as much as possible. This means that we would, at least, manage the application and qualification processes for the two awards as a single operation.
- 4.3 The Award Process will be conducted in accordance with Regulations that set out the auction procedure in detail. A copy of the proposed Regulations in draft form is published in the Notice of our proposals to make regulations in connection with the first phase awards. Anyone wishing to comment on the draft should review the Notice.
- 4.4 The final form of the Regulations will be placed on our website once they are made, published by The Stationery Office and made available at www.opsi.gov.uk. Anyone making or considering making an application in accordance with the procedure described below should read and understand the rules of the Award Process as set out in the Regulations. If there is any discrepancy between the description of the Regulations contained in this Memorandum and the Regulations, the Regulations will prevail. We will consider all representations made in response to the Notice and, if necessary, change our proposals and the content of the proposed Regulations. The Regulations as enacted may, therefore, differ from the draft provided in the Notice and described below.
- 4.5 In summary, the Award Process comprises:
- an application stage during which applications for Licences will be made to us in accordance with the procedures described in the Regulations;
 - a qualification stage during which we will determine whether applicants are qualified to bid in the Award Process; and
 - an auction stage consisting of one or more Rounds during which Bidders can bid for the Licence on offer;
 - a grant stage in which we grant a licence to the Winning Bidder.
- 4.6 If there is no more than one Bidder for any of the Licences at the end of the qualification stage, we will hold an alternative frequency assignment process for the relevant Licence(s). Otherwise we will proceed to the auction stage for the relevant Licence(s). We plan to use an electronic bidding system for the auction.

Award process timeline

- 4.7 The flowchart provided in Figure 4.1 below provides a simplified graphical illustration of the Award Process. It assumes there is more than one Bidder. Stages that require action by Applicants or Bidders are highlighted in red. Those requiring action by us are in blue.

Figure 4.1 Indicative auction timeline





Start of the Award Process

- 4.8 The Award Process will only begin after the Regulations have come into force. The Regulations will state the date when they will come into force, which is likely to be around one month after the date the Regulations are made.
- 4.9 We will publish notice of the date for receipt of applications on our website. There will be at least one week between the publication of the notice and this date.

Application Stage

- 4.10 Only bodies corporate may apply to participate in the award process, but they need not be incorporated in the UK.
- 4.11 Application procedures and application documentation will be published on our website together with the details of the day and time for delivery. Application forms must be submitted to Ofcom at Riverside House, 2a Southwark Bridge Road, London SE1 9HA in a sealed envelope on the day and within the time period that we specify.
- 4.12 Applicants must complete
- an application form; and
 - an additional member warranty document for each member of its bidder group who is not an Associate, if required.
- 4.13 Applicants must also pay into our bank account an initial deposit of ten thousand pounds by a deadline that we specify. This payment must be sent by same day electronic transfer, with accompanying information that identifies the applicant. Further guidance on the payment of this initial deposit will be provided on our website.

Qualification stage

- 4.14 Following the date for receipt of applications each Applicant will be notified of the names and Associates of each other Applicant. We expect to do this within two Business Days after the date for receipt of applications. This notification will also set a deadline by which Applicants must notify us whether or not any members of their Bidder Group are also Associates of another Applicant. In such cases, Applicants must also notify the other Applicant(s) concerned. We expect that Applicants will have two Business Days to complete this exercise. In parallel, we will consider whether any member of one Bidder Group is also a member of another Bidder Group. Where we determine that any such common membership arises we will notify the Applicants concerned and specify a deadline by which all common memberships must be resolved. We expect that Applicants will have five Business Days to resolve any such common memberships.
- 4.15 During the qualification stage we may ask Applicants to provide additional information or documentation by a specified deadline.
- 4.16 We will notify Applicants whether they have qualified to bid in the auction or alternatively the reasons why they have not qualified to bid. Applicants will also receive notification of the Last Day for Withdrawal. This is the last date on which Applicants who have qualified to bid in the auction may withdraw without forfeiting

their initial deposits. We will publish on our website the names of those applicants who have qualified to bid in the auction and the Last Day for Withdrawal.

- 4.17 If an Applicant who has qualified to bid wishes to withdraw it must send to us a notice to this effect, signed by at least two of its authorised persons, within the deadline specified.
- 4.18 On the next Business Day after the Last Day for Withdrawal, we expect to publish the names of all Bidders (i.e. Applicants qualified to participate in the auction who have not withdrawn) on our website and announce the procedure we will follow for award of the Licences (depending on the number of Bidders).

Process if there are no Bidders

- 4.19 If there are no Bidders, there will be no auction and we will consider an alternative award process.

Process if there is only one Bidder

- 4.20 If there is only one Bidder, there will be no auction. The fee payable will be ten thousand pounds, less the initial deposit, unless the initial deposit has already been forfeited, in which case the full fee for the Licence will be payable.

Process if there is more than one Bidder

- 4.21 Where there is more than one Bidder, there will be an auction.

Auction stage

Preparation for the auction

- 4.22 The auction will be conducted using an Electronic Auction System. This system will enable Bidders to participate in the auction from their own offices and access the Electronic Auction System using the Internet.
- 4.23 Prior to the auction we will supply Bidders with a further guidance document on participating in the auction. This document will give:
- details of the Bidder training that we will organise to assist Bidders in familiarising themselves with the Electronic Auction System;
 - the expected timetable up to the start of the first round;
 - an estimate of the schedule for timing of rounds on the first day of the auction and subsequent days;
 - guidance on submitting deposits;
 - guidance on extensions and alternative means of submitting bids; and
 - our contact details for queries relating to the auction.

Electronic Auction System

- 4.24 The Bidder training that we will organise is expected to last for at least one day. Bidders will participate from their offices and access the Electronic Auction System over the Internet.
- 4.25 We will also:
- notify each Bidder of passwords and deliver to each Bidder digital certificates required to access and use the Electronic Auction System and verify its identity;
 - send each Bidder a user manual for the Electronic Auction System; and
 - notify each Bidder of passwords required to verify that Bidder's identity where we have agreed that the Bidder may submit its Bids by means of an alternative method to the Electronic Auction System.
- 4.26 It is important that Bidders ensure they have the facilities in place at their offices to use the Electronic Auction System and that they are familiar with the guidance we provide on how to use the system and the payment of deposits.

Notification of first round

- 4.27 We will notify Bidders of the day and the time on that day by which we will notify them of the first round.

Progress of rounds

- 4.28 The auction will proceed in discrete rounds with all Bidders making Bids within the same fixed time window.
- 4.29 Prior to the start of each round we will give notice to each Bidder setting out the date and times on that date within which Bidders can make Bids and the round price for that round.
- 4.30 After the end of a round and before the start of a subsequent round we will notify Bidders of the number of Bidders in that round who made:
- a valid Bid at the round price for that round; and/or
 - a valid Bid at an amount less than the round price for that round.
- 4.31 The round price in the first round will be fifteen thousand pounds. In subsequent rounds the round price will be higher than that for the previous round, but will not be more than twice the amount of the round price in the previous round.
- 4.32 In each round of the auction, Bidders state whether they accept or reject the round price, i.e. whether they are willing to make a bid for the Licence at the round price. Where a Bidder accepts and so submits a Bid at the round price it will be eligible to bid in the next round.
- 4.33 Where a Bidder rejects the round price (i.e. is not willing to make a bid for the Licence at the round price) it then has a choice. It can make no further bids in the current round with the effect that its highest Bid will then be its Bid in the previous round at the round price. Alternatively it may make a Bid for the Licence in the

current round at an amount in whole pounds sterling which is the maximum it is prepared to pay for the Licence. This Bid must be greater than the round price in the preceding round (or greater than £10,000 if this is the first round) and less than the round price in the current round. Where a Bidder submits a Bid lower than the round price and there is another round it will not be eligible to bid in that round (or in subsequent rounds). Where in the final round a Bidder submits a Bid lower than the round price its bid will be taken into account in determining the Winning Bid, the identity of the Winning bidder and the licence fee.

4.34 An illustration of how the auction design works is provided in Table 4.1 in paragraph 4.52 below.

Valid bids

4.35 To be a Valid Bid - and therefore taken into account when determining the valid bid total, the winning bid and the licence fee payable by the Winning Bidder - a Bid must satisfy conditions set out in the Regulations. These conditions are that:

- it is made on a correctly completed bid form provided by us;
- it is the only Bid submitted by the Bidder in that round;
- the Bidder has made a Valid Bid in the previous round at an amount equal to the round price;
- a Bid made in the first round is between ten thousand pounds and fifteen thousand pounds;
- a Bid made during a subsequent round is an amount that is more than the round price for the preceding round but not more than the round price for the current round;
- the Bid is submitted using the Electronic Auction System (or an alternative method as provided for in regulation 25); and
- the Bid is submitted by the end of the round time.

If a Bidder does not submit a valid bid in the first round it will forfeit its deposit.

4.36 If a Bidder submits a bid that is not valid, we will, after the end of the round, notify the Bidder and explain why it is not valid.

Extensions

4.37 If we do not receive a completed bid form from a Bidder within the required time period for an auction round, we will allow an extension period, provided that we receive the completed bid form no later than thirty minutes after the expiry of the round. A Bidder will be allowed no more than two extension periods in respect of all the rounds. However, if, during a previous round, a Bidder submitted a bid form during the thirty minute time extension period because of circumstances beyond the Bidder's control and we are satisfied that this is the case, the Bidder will be granted a further extension right.

Submission of bids in exceptional circumstances

- 4.38 If the Bidder is unable to submit a bid using the Electronic Auction System in certain circumstances, there is provision to submit a completed bid form by means of an alternative method, subject to certain conditions that are set out in regulation 25 of the Regulations.

Incomplete or defective bid forms

- 4.39 Where any bid form is incomplete or defective but we believe we can ascertain the intention of the Bidder, we will ask the bidder concerned to confirm that our understanding is correct. Where the Bidder confirms that our understanding is correct, the bid form will be accepted in its entirety on the basis of that understanding. Where the Bidder does not confirm that our understanding is correct, the bid form will not be taken into consideration for the purposes of determining the bid total, the winning bid and the licence fee payable by the winning Bidder.

Additional deposits

- 4.40 In addition to the initial deposit, a Bidder may pay us an additional sum, in pounds. Any such additional sum must be paid into our bank account, by a same day electronic transfer, with accompanying information that identifies the bidder by the deadline we specify.
- 4.41 Bidders may receive a notice from us that they are required to pay a further sum in pounds as a deposit during the rounds. The further sum required from the Bidder will be an amount such that the Bidder's total amount on deposit (subject to any amount forfeited) is not less than the amount of the highest Valid Bid that the Bidder made before we issued the notification. For guidance purposes, if we issue a notice to a Bidder before 2.00 p.m. on a Business Day, the deadline by which we will require that Bidder to increase its deposit by paying an additional amount into our bank account will be no earlier than midnight on the following Business day (e.g. if a Bidder receives a notice from us at 1 p.m. on Tuesday, the deadline for increasing its deposit will be no earlier than midnight on Wednesday). If we issue a notice to a Bidder after 2.00 p.m. on a Business Day, the deadline by which that Bidder must increase its deposit by paying an additional amount into our bank account will be no earlier than midnight on the next Business Day after the following Business Day (e.g. if a Bidder receives a notice from us at 3.00 p.m. on Thursday, the deadline for increasing its deposit will be no earlier than midnight on Monday.) If a Bidder fails to comply with our notification we will notify the Bidder that it will be unable to make bids in any subsequent rounds. However, the bids it made before being notified of this will remain valid.

Winner determination and licence fee

- 4.42 Following the final round, we will determine the Winning Bid and the identity of the Winning Bidder. The Winning Bid will be the highest bid made in the auction stage. The licence fee for the Winning Bidder will be the amount of the highest valid bid in the auction stage that was not the Winning Bid unless the circumstances described, in paragraphs 4.41 and 4.42 below, apply.
- 4.43 Where there is only one valid bid in the first round of the auction, the licence fee will be ten thousand pounds.

- 4.44 Where there is more than one valid bid of equal highest value in any round, we will employ a method of random selection amongst the Bids to determine the Winning Bid. The licence fee where this applies will be the amount of the highest Bid.
- 4.45 Following the determination of the Winning Bid and the determination of the licence fee we will notify the Winning Bidder of the winning bid and the licence fee.
- 4.46 If the Winning Bidder's deposit is less than the licence fee, we will notify the Bidder of the deadline (which we expect to be two business days following the notification) by which it must remit to us a sum equal to the difference between the licence fee and the amount of the bidder's deposit. Where the Bidder pays the correct sum, we will grant the Winning Bidder the licence.
- 4.47 If the Winning Bidder's deposit is greater than, or equal to, the licence fee, we will grant the Bidder the licence and refund the difference (if any) between the amount of the winning Bidder's deposit and the licence fee.
- 4.48 Where a Winning Bidder does not satisfy the requirements set out in paragraph 4.46 above, the winning Bidder will not be entitled to the grant of the licence and will not receive a refund of any deposits that it has made.
- 4.49 In this case we will select a winner from among a list of Appropriate Bidders. The order of preference for selection will be determined by the Bids made by those Bidders, with higher Bids prevailing over lower sums bid. Where any two or more Bidders bid sums of equal value, we will employ a method of random selection to determine the precedence amongst those Bidders. The licence fee payable for the Winning Bidder will be calculated under regulation 31(6) and the winner will be notified of the results of the auction stage under regulation 32. We will then follow the procedures where either the amount of the winning bidder's deposit is less than the licence fee, or the amount of the winning bidder's deposit is greater than, or equal, to the licence fee. If the winning Bidder under this procedure fails to follow the requirement (if applicable) set out in regulation 33(1)(b) we will follow the procedure in respect of the next bidder, in the order of precedence, until the licence is awarded, or the list of Appropriate Bidders is exhausted.
- 4.50 Bidders should be aware that where a Winning Bidder fails to pay outstanding amount of the licence fee by the deadline, its deposit will be forfeit, and we retain the right to recover the outstanding sums which should have been paid.

Publication of results

- 4.51 Following the grant of the licence we will complete the award process by publishing details of all Valid Bids made by each Bidder, the name of the person to whom the licence was granted and the amount of the licence fee paid. We will also refund to Applicants who were not qualified (or withdrew) and to unsuccessful Bidders the initial deposits and any further sums paid by way of deposit (unless forfeit under the regulations). No interest that has accrued on the deposits will be paid.

Illustration of the award process

- 4.52 Table 4.1 below illustrates how bidding in an auction might proceed. The bidders and bids are fictitious and are not intended to provide any information about the potential value or level of competition for a licence.

Table 4.1 illustration of the award process

Applicants and bidders	The reserve price for the Wenvoe licence is £10,000. Three potential bidders – Amy, Ben and Colin – each submits an application to bid for the Wenvoe licence, with a deposit of £10,000. After Ofcom has checked their applications, all are qualified to bid.
Commitment to bidding	As part of their applications, Amy, Ben and Colin have committed themselves to buying the Wenvoe licence at the price of £10,000.
Is an auction needed for the licence?	As there are three bidders an auction is required for the licence.
Bidding over the internet	The auction for the licence will be conducted using electronic bidding over the internet. Amy, Ben and Colin will be provided with a web address, passwords and digital certificates (that they can install on a PC) in order to have secure access to the bidding system. In advance of each round the bidders will be notified of a start time and end time for the round during which they must submit their bids.
Round 1	In round 1 of the auction, the minimum bid price for the licence is £10,000. The round price is set at the higher level of £15,000. All three bidders decide to bid at the round price. At the end of the round, bidders are notified that there were three bids at the round price of £15,000 and that the auction will continue to round 2. (Note that bidders are not told the identity of the bidders.)
Round 2	In round 2 Ofcom sets a bid increment of 40 per cent. The round price for the licence is £21,000, i.e. each makes a bid for the licence at the price of £21,000. Only Amy and Ben accept this price. Colin rejects this price. He then faces a choice of whether to make a further bid, in addition to his bid in round 1. He decides to submit a further bid. This bid must be less than £21,000 (the round price in this round) and greater than the previous round price of £15,000. He decides to bid £18,007. At the end of the round, bidders are notified that there were two bids at the round price and one below the round price, and that the auction will continue to round 3. Colin will not be able to bid in round 3 or subsequent rounds.
Round 3	In round 3, Ofcom sets the bid increment at 20 per cent. £21,000 plus 20 per cent equals £25,200. This is rounded up to the nearest £1,000. Thus the round price is £26,000. Both Amy and Ben decide to accept this price. At the end of the round, bidders are notified that there were two bids at the round price and that the auction will continue to round 4.
Round 4	In round 4, Ofcom sets a bid increment of 20 per cent. £26,000 plus 20 per cent equals £31,200. This is rounded up to nearest £1,000. Thus the round price is £32,000.

	<p>Amy accepts this price. Ben rejects the price but chooses to submit a further bid of £30,002. (This amount is acceptable because it is less than £32,000, the round price in this round, and greater than £26,000 the round price in round 3.) At the end of the round, bidders are notified that there was only one bid at the current price, one bid below the round price was made and that no further bidding rounds are required. Round 4 is the final round.</p>
Result of the auction	<p>After the close of the final round Amy is told that she is the winner of the licence. Although Amy's highest bid submitted was £32,000 the licence fee she has to pay is equal to the amount bid by the second highest bidder, Ben. That is, Amy has to pay £30,002. Amy has a deposit of £10,000 and so has to pay the balance of £20,002 within Ofcom's deadline. Once she has paid this Ofcom issues the Wenvoe licence to her. Ben and Colin are refunded their deposits of £10,000. Ofcom announces the auction result.</p>

Changes to the award process

- 4.53 The Regulations enable us to alter the deadline or location specified in relation to the delivery of any documents or completion of any action in relation to the award process where it would be impractical for such delivery or such action to take place at the locations or by, or within, the deadlines originally specified.
- 4.54 Where it would be impractical to start or end a round at the times notified to Bidders, or to use the Electronic Auction System, we will take all reasonable steps to notify bidders of revised timings and an alternative method of participating in the auction.
- 4.55 Where an auction round is in progress and we determine that it is not possible to continue the round due to technical failure (or an event of similar effect) we will take all reasonable steps to notify Bidders of our determination, disregard bids made in that round and resume the award process from the end of the previous round (or, if there was no previous round, the start of the auction).
- 4.56 If it is not possible to continue the auction stage due to technical failure (or an event with similar effect) we will determine whether it is necessary, in order to secure a fair and efficient outcome to the award process, to disregard bids made in one or more rounds of the auction and resume the award procedure from the end of the latest round for which bids are not disregarded, or to resume from the start of the first round. We will take all reasonable steps to notify Bidders of our above determination.

Activity rules

- 4.57 The auction regulations set out activity rules that apply to applicants who have qualified to bid and to Bidders. If we are satisfied that any of the events set out in regulation 38 are occurring, or have occurred, and that occurrence would materially affect the outcome of the award process, the Bidder or Applicant concerned will forfeit all of the sums that it has paid on deposit to us. We may also exclude the Bidder from the award process by giving that Applicant or Bidder written notice.

4.58 The events that may result in a Bidder forfeiting its deposits or being excluded from the award process are as follows:

- the submission to us of any information in connection with the award process which is false or misleading;
- any member of the Applicant's or Bidder's bidder group colluding or attempting to collude with another person to distort the outcome of the award process;
- any member of that Applicant's or Bidder's bidder group acting in a way which is likely to distort the outcome of the award process;
- any member of that Applicant's or Bidder's bidder group, or any person to whom confidential information has been disclosed, disclosing, or attempting to disclose, or inciting another person to disclose, any confidential information, whether directly or indirectly, to any person, except where the disclosure is:
 - to us;
 - to a member of that Applicant's or Bidder's bidder group;
 - to a provider of finance for the purpose of raising finance for a bid; or
 - to a person for the purpose of enabling that person to decide whether to participate as a member of the Applicant's or Bidder's bidder group.
- any member of that Applicant's or Bidder's bidder group obtaining or attempting to obtain confidential information relating to another applicant or bidder;
- any member of that Applicant's or Bidder's bidder group receiving or attempting to receive services in relation to the award process from any person who has provided or is providing services to us in relation to the award process;
- any person who is a member or a director or employee of a member of that Applicant's or Bidder's bidder group and also a director or employee of a member of another bidder group:
 - taking part in the preparation of both bidder groups for participation in the award process; or
 - receiving confidential information relating to both bidder groups;
- a member of that Applicant's or Bidder's bidder group is or becomes a member of another applicant's or bidder's bidder group;
- a change occurring in the membership of that Applicant's or Bidder's bidder group from that notified to us in its application except as a result of :
 - a person ceasing to be a member of that bidder group;
 - a person joining that bidder group under the procedure in regulation 6(3);
 - a person becoming an Associate through merger or acquisition activity provided that such activity is not for a purpose related to the award process.

General power of exclusion

- 4.59 The award regulations give us a general power of exclusion where we determine in our opinion that the grant of a licence to a Bidder would be prejudicial to the interests of national security or where the Bidder is not a fit and proper person to hold a licence.

Notifications to Ofcom

- 4.60 If an Applicant or Bidder needs to notify us of any fact or circumstance, it must do so by notice in writing by one of the following means:
- electronic mail to an electronic mail address dedicated to the Award Process that we publish on our website; or
 - personal delivery to Riverside House, 2a Southwark Bridge Road, London, SE1A 9HA; or
 - fax to a number dedicated to the Award Process that we publish on our website.
- 4.61 Where we have agreed that a Bidder may submit a Bid Form using an Alternative Method to the Electronic Auction System we will provide the Bidder with the appropriate contact details.

Section 5

Associated policy issues

Introduction

- 5.1 This section provides some summary information on related policy issues and relevant regulations related to the award of spectrum that is the subject of this Memorandum. It provides an overview of:
- our approach to spectrum management (paragraphs 5.3 to 5.5);
 - other current or forthcoming spectrum awards, including other digital dividend awards (paragraphs 5.7 to 5.31);
 - competition from other services (paragraph 5.16 to 5.17);
 - follow-up to the Independent Audit of Spectrum Holdings (paragraphs 5.18 to 5.21);
 - the London 2012 Olympic Games and Paralympic Games and the Glasgow 2014 Commonwealth Games (paragraphs 5.22 to 5.31);
 - our Second Public Service Broadcasting Review (PSB) (paragraphs 5.32 to 5.35);
 - other Ofcom consultations that may be relevant to these awards (paragraphs 5.32 to 5.42);
 - Arqiva's undertakings to the Competition Commission following the investigation of its acquisition of NGW (paragraphs 5.43 to 5.45);
 - our pay TV market investigation and consultation on British Sky Broadcasting Limited ("Sky") (paragraphs 5.46 to 5.48);
 - non-operational licences (paragraphs 5.49 to 5.51);
 - innovative uses of spectrum (paragraphs 5.52 to 5.54);
 - Sitefinder (paragraphs 5.55 to 5.56);
 - The Radio and Telecommunications Terminal Equipment (R&TTE) Directive (paragraph 5.57);
 - AIP (paragraphs 5.58 to 5.60);
 - the Electronic Communications Code (paragraphs 5.61 to 5.71);
 - other regulation of electronic communications networks (ECN) and electronic communications services (ECS) (paragraphs 5.63 to 5.64);
 - content services (paragraph 5.65);

- General Conditions of Entitlement (paragraphs 5.66 to 5.71);
- EU Framework Review (paragraphs 5.72 to 5.73);
- Audiovisual Media Services Directive (paragraphs 5.74 to 5.75);
- state aid (paragraphs 5.76 to 5.77); and
- any tax consequences of being awarded a Licence (paragraphs 5.78 to 5.81).

5.2 It is the responsibility of interested parties to determine how legislation and regulatory provisions apply to their specific circumstances, whether in relation to spectrum use, provision of downstream ECS or any other aspect of future business related use of the spectrum that is the subject of this Memorandum. In doing so, interested parties should be aware of the on-going process to reform the regulatory framework for ECN and ECS in the EU. Any resulting changes to EU law are likely to be applicable in the UK. Further information is available from the European Commission's website at: http://ec.europa.eu/information_society/policy/ecommm/tomorrow/index_en.htm

Our approach to spectrum management

5.3 We license use of most of the civil radio spectrum in the UK, with the aim of securing its optimal use and meeting our other statutory duties. We also represent the UK internationally on spectrum matters under the direction of the Government. We authorise spectrum use in the UK by licensing or by exemption from the requirement to hold a licence under section 8 of the WT Act. Our general approach to spectrum management has been set out in a number of documents published over the past few years, including:

- the Spectrum Framework Review (SFR) consultation document published in November 2004 and statement published in June 2005²¹;
- the Spectrum Trading consultation document published in November 2003 and the Trading statement published in August 2004²²; and
- the Spectrum Liberalisation consultation document published in September 2004 and statement published in January 2005²³.

5.4 The approach is also summarised in the Spectrum Framework Review: Implementation Plan (SFR:IP) consultation document (section 3) and in the SFR:IP interim statement of 28 July 2005²⁴.

5.5 The award of Licences outlined in this Memorandum forms part of a wider programme of awards proposed in the SFR:IP. Specifically, paragraphs 5.30 to 5.34 of the SFR:IP were concerned with the award of the 470-854 MHz broadcast dividend. Our general approach to the awards in this programme is outlined in the SFR:IP (see section 4 in particular) and the SFR:IP interim statement (see section 4

²¹ <http://www.ofcom.org.uk/consult/condocs/sfr/>

²² http://www.ofcom.org.uk/consult/condocs/spec_trad/

²³ <http://www.ofcom.org.uk/consult/condocs/liberalisation2/>

²⁴ <http://www.ofcom.org.uk/consult/condocs/sfrif/>

in particular). We also published on 3 April 2008 a review and update on the SFR and SFR:IP²⁵.

- 5.6 Our Spectrum Awards website²⁶ contains information and updates on the programme of awards. The programme is subject to change from time to time, as are other aspects of spectrum policy and regulations.

Other spectrum awards

- 5.7 We have completed five awards to date, including in May 2008 an award for use of the L Band spectrum at 1452-1492 MHz²⁷. Several other spectrum awards are in preparation, including:

- 2010-2025 MHz and 2500-2690 MHz (the 2.6 GHz band), for which an Information Memorandum was published on 4 April 2008²⁸; and
- 872-876 MHz and 917-921 MHz), for which we plan to publish a consultation document in the first part of 2009.

Digital Dividend Review

- 5.8 In summer 2008, we published three separate consultations on the spectrum awards for the digital dividend:

- a consultation on the award of the cleared spectrum²⁹;
- a consultation on the geographic interleaved spectrum awards³⁰; and
- a consultation on the award of spectrum to a band manager with obligations toward PMSE.

- 5.9 We set out below the position on each of these awards.

Digital dividend cleared award

- 5.10 In connection with the Digital Dividend Review (DDR), we published a consultation document on 6 June 2008³¹ that focused on the detailed design of the award of the cleared spectrum in the bands 550-630 MHz and 806-854 MHz and the interleaved spectrum in the 790-806 MHz band. This consultation closed on 15 August 2008.

- 5.11 Stakeholder responses to our consultation have argued amongst other things that we should re-plan the UK's digital dividend to align with EU proposals for non-mandatory harmonisation of channels 61 to 69 for two way mobile services. Stakeholders have also flagged that the CEPT working group report on technical licence conditions for 2 way mobile services in channels 61 to 69 is now likely to be finalised in June 2009 as opposed to the end of this year. Furthermore, France has recently announced its

²⁵ <http://www.ofcom.org.uk/radiocomms/sfr/sfrprogress/sfrprogress.pdf>

²⁶ <http://www.ofcom.org.uk/radiocomms/spectrumawards/>

²⁷ http://www.ofcom.org.uk/radiocomms/spectrumawards/completedawards/award_1452/

²⁸ <http://www.ofcom.org.uk/consult/condocs/2ghzrules/statementim/im/im.pdf>

²⁹ <http://www.ofcom.org.uk/consult/condocs/clearedaward/>

³⁰ <http://www.ofcom.org.uk/consult/condocs/ddrinterleaved/>

³¹ <http://www.ofcom.org.uk/consult/condocs/clearedaward/condoc.pdf>

intention to clear channels 61 to 69 and that it will enter into bi-lateral co-ordination negotiations to this end.

- 5.12 We are currently considering the potential impact of these significant developments on our proposals to hold the cleared award. We continue to plan to hold the award for digital dividend cleared spectrum as soon as possible.

Geographic interleaved awards

- 5.13 The consultation on the geographic interleaved spectrum awards was published on 12 June 2008 and closed on 21 August 2008. We proposed a phased approach to the award of the geographic interleaved spectrum:
- In the initial phase we would award spectrum lots for areas where DSO is before spring 2010 and where there are existing restricted television service licences (RTSLs), i.e. at the Caldbeck transmission site (for Carlisle), the Winter Hill transmission site (for Manchester) and the Wenvoe transmission site (for Cardiff). The awards of licences for Winter Hill and Wenvoe are the subject of this Memorandum. Due to the lack of interest from any local operator or anyone else, and noting that the RTSL for Carlisle has expired, we will not at this stage award a lot for Caldbeck to cover Carlisle. However a lot at Caldbeck could be included in a later award.
 - A combined award of spectrum lots at about 25 transmission sites that cover population areas likely to be large enough to support a broadcasting station, and may be suitable for aggregation. The transmission sites include Wenvoe and Winter Hill.
 - The further phase of individual awards of spectrum lots in other areas for which we receive convincing expressions of interest.
- 5.14 We are currently considering how to proceed with the combined and further phase of awards, in the light of responses to all three digital dividend consultations, and we hope to indicate our next steps by the end of this year.

DDR band manager award

- 5.15 This consultation document was published on 31 July 2008³² and closed on 16 October 2008. We are considering the responses received before deciding on the next steps.

Competition from other services

- 5.16 Any party considering participating in this Award Process must make its own independent assessment of the competition that its services using the spectrum to be awarded will face from existing and future services and the implications of this competition for the potential value of a Licence.
- 5.17 It should be noted that other authorisations of spectrum use may permit the provision of services that could compete with those that may be offered using the spectrum to be awarded. We are not, as a function of this Award Process, placing any limitation on our scope to authorise others to use spectrum to offer such services. Such authorisation may occur, for example, by way of the grant of new licences, decisions

³² <http://www.ofcom.org.uk/consult/condocs/bandmgr/condoc.pdf>

on the variation of existing licences, or decisions on exemptions from licensing. As set out in the SFR and elsewhere, our general policy is to move toward authorising the use of spectrum on a service and technology neutral basis that provides much greater flexibility for the use of spectrum to respond to demand and to be economically efficient.

Follow-up to the Independent Audit of Spectrum Holdings

- 5.18 The Independent Audit of Spectrum Holdings³³, led by Professor Martin Cave, recommended wide ranging changes to the management of public sector, aeronautical and maritime spectrum. The audit, which focused on spectrum below 15 GHz, also identified a number of opportunities to increase efficiency of spectrum use potentially resulting in the release of spectrum for commercial use. The Government's response³⁴, published in March 2006, accepted the recommendations of the audit and outlined a plan for implementing them. A progress statement was published in December 2006. The Government published its first "Forward Look", setting out its strategy for managing major public sector spectrum holdings, in March 2007³⁵.
- 5.19 In July 2007, we published a consultation document – Spectrum Framework Review: the Public Sector³⁶ - that set out proposals to make public sector spectrum holdings tradable with a view to facilitating, and providing incentives for, their release for commercial use in line with the recommendations of the Independent Audit and the Forward Look. The consultation closed on 4 October 2007, and we published a statement describing our conclusions on 31 January 2008³⁷.
- 5.20 In the consultation, we indicated frequency bands below approximately 15 GHz that might in future be made tradable. However, the Ministry of Defence (MOD) and other public sector bodies concerned have not yet decided how much spectrum to release or in which frequency bands. The October 2007 Pre-Budget Report committed the MOD, which has the largest public sector spectrum holdings, to release a "significant proportion" beginning in 2008. The MOD is conducting a detailed audit of its future spectrum requirements and published a consultation document on 30 May 2008 entitled 'UK Defence Spectrum Management, A Consultation on an Implementation Plan for Reform'³⁸. This consultation closed on 5 September 2008, and the MOD is expected to announce its conclusions in due course.
- 5.21 We published a further consultation document - 'Spectrum Framework Review for the Public Sector – notice of Ofcom's proposal to make regulations on Recognised Spectrum Access for public bodies and consultation on technical conditions' - on 20 June 2008³⁹. This document gives notice of, and consults on our intention to make, the necessary regulations and an order for the 406.1-430 MHz band as the first step to allow public bodies to hold and trade recognised spectrum access (RSA). The document also consults on the technical conditions to be included in the initial grant of RSA. The consultation closed on 1 August 2008. We have published the

³³ <http://www.spectrumbaudit.org.uk/pdf/20051118%20Final%20Formatted%20v9.pdf>

³⁴ <http://www.spectrumbaudit.org.uk/pdf/governmentresponse.pdf>

³⁵ http://www.spectrumbaudit.org.uk/pdf/Forward_Look_2007.pdf

³⁶ <http://www.ofcom.org.uk/consult/condocs/sfrps/sfrps.pdf>

³⁷ <http://www.ofcom.org.uk/consult/condocs/sfrps/statement/statement.pdf>

³⁸ [http://www.mod.uk/NR/rdonlyres/8B9CFFD1-6C36-476A-A6C3-](http://www.mod.uk/NR/rdonlyres/8B9CFFD1-6C36-476A-A6C3-8A3E5635DC55/0/dsm_consultation_report.pdf)

[8A3E5635DC55/0/dsm_consultation_report.pdf](http://www.mod.uk/NR/rdonlyres/8B9CFFD1-6C36-476A-A6C3-8A3E5635DC55/0/dsm_consultation_report.pdf)

³⁹ <http://www.ofcom.org.uk/consult/condocs/sfrps08/sfrps08.pdf>

responses, except where confidentiality was requested, and will announce our decision in due course.

London 2012 Olympic Games and Paralympic Games and Glasgow 2014 Commonwealth Games

- 5.22 On 6 July 2005, London was chosen to host the games of the XXX Olympiad (the "London Games"), which will take place between 27 July and 9 September 2012. The Olympic Park is being built on a 500-acre site in the Lower Lea Valley, while Wembley Stadium, the All England Lawn Tennis and Croquet Club, Lord's Cricket Ground, Greenwich Park, Regent's Park, Hyde Park and Horse Guards Parade will also host events in London. The Eton College Rowing Centre at Dorney Lake, Weymouth Bay and Portland Harbour and five other football grounds – Hampden Park, the Millennium Stadium, Old Trafford, St. James' Park and Villa Park – currently make up the remaining venues.
- 5.23 As well as the London Games themselves, test events will take place at Weymouth and Portland in 2010 and at these and other venues during 2011 and into 2012.
- 5.24 Guarantee 15.8 of London's bid for the Games stated that:
- "By early planning and understanding all the frequency requirements (including broadcasters, teams, organisers, policy, security and emergency services etc.), Ofcom will organise a full frequency plan for the Games and will arrange all the spectrum licences in good time in support of the plan. This will guarantee access to spectrum for all the licensees. . . . The Secretary of State for Trade and Industry has guaranteed on behalf of the UK Government the allocation of the frequencies required for the organisation of the Games."
- 5.25 Guarantee 15.9 of the bid stated that:
- "The Secretary of State for the Department of Trade and Industry has guaranteed on behalf of the UK Government to the waiving of fees payable for the allocated frequencies required for the Games."
- 5.26 We are working closely with the Government and the London Organising Committee of the Olympic Games and Paralympic Games ("LOCOG") to take forward this spectrum plan. Interested parties may wish to know that on 30 November 2007 we published a discussion document that addresses issues that we must consider in planning spectrum use for the Games⁴⁰.
- 5.27 The Secretary of State clarified in a letter to the President of the International Olympic Committee ("IOC") that this guarantee applied in respect of the following constituent groups:
- athletes;
 - the IOC;
 - LOCOG;

⁴⁰ <http://www.ofcom.org.uk/consult/condocs/spectrum2012/condoc.pdf>

- national Olympic committees;
- international federations of sport;
- the media;
- rights-holding broadcasters; and
- Olympic partners (i.e. sponsors).

5.28 We have considered the relevance of these guarantees to the Bands being awarded under this Award Process. We have decided that no condition should be included in the Licences for use of the spectrum bands to be awarded under this Award Process.

5.29 Section 5 of the Communications Act provides that the Secretary of State may direct us in relation to our functions relating to the management of the radio spectrum. The Secretary of State's power extends to issuing directions to us for the purpose of securing compliance with the UK's international obligations. Under Section 8 of Schedule 1 to the WT Act, we may ourselves at any time revoke a licence or vary its terms, provisions or limitations if it appears to us to be necessary or expedient to do so for the purpose of securing compliance with an international obligation of the UK. The Government has advised us that the guarantees given to the IOC constitute international obligations of the UK.

5.30 It is not possible for the Secretary of State or us to fetter their discretion about the exercise of their respective powers as described in paragraph 5.29. However, neither we nor the Government expects to exercise its powers, without the consent of the Licensee, to vary or revoke the Licences being awarded under this Award Process for the purpose of meeting the UK's international obligations relating to the London Games.

5.31 Potential bidders should be aware that the Government has given similar guarantees on spectrum for the Glasgow 2014 Commonwealth Games (the "Glasgow Games"). As with the London Games, although it is not possible for the Secretary of State or us to fetter their discretion, neither expects to exercise its power, without the consent of the Licensee, to vary or revoke the Licences being awarded under this Award Process for the purpose of meeting the UK's international obligations relating to the Glasgow Games.

PSB review

5.32 At least once every five years, we have a duty, set by Parliament, to conduct a review of PSB. The first such review started at the end of 2003 and finished early in 2005. We are required:

- to report on the extent to which the PSBs have delivered the purposes of PSB; and
- to make recommendations with a view to maintaining and strengthening the quality of PSB in the future.

5.33 In making our recommendations we are required to consider the costs of provision and the sources of income available to the PSBs to meet those costs.

- 5.34 We published a consultation document forming phase one of our Second Public Service Broadcasting Review on 10 April 2008⁴¹ titled 'Phase One: The Digital Opportunity'. The consultation closed on 19 June 2008 and a summary of consultation responses was published on 17 July 2008⁴². The aim of the first phase of the work was to assess the current delivery of public purposes by the PSBs and other providers, to set out a broad analysis of the future development of PSB and to stimulate a broad debate on the major choices the UK faces in maintaining and strengthening PSB.
- 5.35 A second consultation titled 'Ofcom's Second Public Service Broadcasting Review – Phase2: preparing for a digital future' was published on 25 September 2008⁴³. A Phase 3 statement is likely to be published in the new year.

Other Ofcom consultations

Licence exempt cognitive access to interleaved spectrum

- 5.36 A cognitive device scans the available spectrum, determines which parts of it are currently unused and, as needed, makes use of this spectrum when it has information to transmit. Cognitive devices are often described as being particularly suited for high bandwidth services such as home and business networks, community and campus networks and municipal Wi-Fi.
- 5.37 In the DDR statement we concluded that cognitive devices could make flexible use of the interleaved spectrum on a licence-exempt basis without causing harmful interference to licensed users, depending on the development of effective spectrum sensing technology.
- 5.38 In allowing licence-exempt access to the interleaved spectrum to cognitive devices, it is important to specify a number of parameters to avoid harmful interference from the devices to licensed users of the spectrum. Key among these are the sensitivity of the cognitive device to detecting signals from other users and the power levels it is allowed to transmit.
- 5.39 We expect to publish a consultation document on licence exempt cognitive access to interleaved spectrum in late 2008 or early 2009.

The Future of DTT

- 5.40 On 21 November 2007 we published a consultation document 'on the future of DTT'⁴⁴. The document described an opportunity that exists to upgrade the Digital Terrestrial Television (DTT) platform over the next few years by introducing new technologies (MPEG-4 and DVB-T2) that will greatly increase the capacity available. This upgrade will in turn enable the platform to offer a wider, richer and more varied set of services including the potential for services in High Definition (HD).

⁴¹ http://www.ofcom.org.uk/consult/condocs/psb2_1/consultation.pdf

⁴² http://www.ofcom.org.uk/consult/condocs/psb2_1/responsesummary/summary.pdf

⁴³ http://www.ofcom.org.uk/consult/condocs/psb2_phase2/psb2_phase2.pdf

⁴⁴ <http://www.ofcom.org.uk/consult/condocs/dttfuture/dttfuture.pdf>

5.41 We subsequently published a statement on 3 April 2008⁴⁵ that incorporated our recommendations to the Government on the key issues; in July an Order that enables the following changes:

- services to be reorganised to clear one universal coverage (PSB) multiplex, multiplex B operated by BBC Free to View Limited. Multiplex B will be upgraded to use the MPEG-4 and DVB-T2 standards to enable carriage of three HD (or up to 15 standard definition) sized services from 2009.
- capacity should, in principle, be reserved for core PSB services on PSB multiplexes, including Five and S4C, TG4 and the Gaelic Digital Service – if approved for DTT carriage by the BBC Trust.
- the reorganisation is contingent on DSO (as it relies on efficiency gains at DSO) with the Granada television region targeted as the first region in late 2009. The first three blocks of multiplex B capacity will become available at that point with a fourth expected later, possibly in 2010.
- the BBC Trust will retain oversight of the use of one of these blocks with the remaining two reserved by us, together with the fourth slot when that becomes available. On 17 October 2008⁴⁶ we reserved capacity for a channel 3 HD service and a Channel 4/S4C HD service.

The BBC as the multiplex operator is leading implementation of the programme with support from the Channel 3 licensees, Channel 4/S4C and others. A working group has been established involving the main stakeholder groups and a technical pilot, coordinated by us, is underway.

Review of quality of service information

5.42 We published a consultation document on 17 July 2008 entitled 'Review of quality of service information – Phase 1: Information on quality of customer service'⁴⁷. This consultation closed on 8 October 2008 and is the first phase of our review of quality of service information. It looks at the provision of customer service information in the fixed voice, mobile and broadband markets. It does not consider technical or network quality of service information on these services, which will form the future phases of our review.

Other current regulatory issues

Arqiva/NGW merger

5.43 In August 2007, the Office of Fair Trading referred the merger of Macquarie UK Broadcast Holdings Limited (a subsidiary of which is Arqiva Limited) and NGW to the Competition Commission. The merger combines Arqiva and NGW, which are the only two integrated terrestrial broadcast transmission companies in the UK. The Competition Commission announced on 11 March 2008⁴⁸ that it would allow the completed acquisition subject to the agreement of a package of measures to protect

⁴⁵ <http://www.ofcom.org.uk/consult/condocs/dttfuture/statement/statement.pdf>

⁴⁶ http://www.ofcom.org.uk/media/news/2008/10/nr_20081017

⁴⁷ <http://www.ofcom.org.uk/consult/condocs/qos08/qos08.pdf>

⁴⁸ <http://www.competition-commission.org.uk/inquiries/ref2007/macquarie/index.htm>

the interests of their customers. The Notice of Acceptance of Final Undertakings was published by the Competition Commission on 1 September 2008.⁴⁹

- 5.44 Arqiva gave undertakings to the Competition Commission following the investigation of its acquisition of NGW. The undertakings oblige Arqiva to publish reference offers for DTT transmission services and network access in respect of spectrum Ofcom considers capable for use for DTT services. These reference offers set out the terms and conditions on which Arqiva is willing to enter into a contract for the provision of the relevant service and the technical specification (including stations) of the service. We are notifying Arqiva of these initial phase awards and are asking them to publish relevant reference offers within six weeks.
- 5.45 As required by the undertakings, we have appointed an Adjudicator for Broadcast Transmission Services who will provide guidance and resolve any disputes relating to Arqiva's obligations under the undertakings. Interested parties should note that we would not allow such a dispute to fetter our discretion to hold an award in respect of the Licences being awarded.

Pay TV market investigation and proposed Sky DTT services

- 5.46 In September 2008, we published further consultation documents in respect of our review of Pay TV⁵⁰ and 'Picnic'⁵¹ proposals. Our Pay TV review is concerned with competition conditions in the Pay TV markets, and was prompted by submissions from BT, Setanta, Top Up TV and Virgin Media. Our 'picnic' review is concerned with a application by National Grid Wireless Ltd⁵² and Sky to replace Sky's three free to air channels on the DTT platform with pay TV channels as part of Sky's 'Picnic' service.
- 5.47 We consult in the first document on our view that channels containing certain types of premium content (broadly speaking, live Premium League football and first-run Hollywood blockbuster movies on pay TV) are in narrow wholesale markets and that Sky has market power in those markets. We note that such weaknesses in competition in wholesale markets risks reduced choice and innovation and higher prices for pay TV consumers. We consult on our proposal to address our concerns by requiring Sky to wholesale designated premium channels on regulated terms.
- 5.48 In the light of these conclusions we have reached the view in our second 'Picnic' consultation that it is highly unlikely any competitor would be able to compete effectively with Picnic in the absence of wholesale access to Sky's premium channels. We are consulting on our preliminary conclusion that we should consent to Sky's proposal but only subject to effective fulfilment of certain conditions. We are therefore also consulting on potential conditions requiring Sky to supply its premium sports and movies channels on a suitable wholesale basis to other broadcasters and related conditions to ensure that the wholesale requirement is workable from a commercial and technical perspective.

Non-operational licences

- 5.49 We issue two classes of short term non-operational wireless telegraphy licences:

⁴⁹ http://www.competition-commission.org.uk/inquiries/ref2007/macquarie/pdf/notice_undertakings.pdf

⁵⁰ http://www.ofcom.org.uk/consult/condocs/second_paytv/

⁵¹ <http://www.ofcom.org.uk/consult/condocs/picnic/>

⁵² Trading under the name of 'Arqiva' since 22 September 2008

- non-operational temporary use – licensed for up to six months; and
 - non-operational development – licensed for 12 months.
- 5.50 These licences enable activities such as the trialling of services and the testing and developing equipment in a range of frequency bands. These licences may, for example, be for systems that are designed for export markets as well as UK markets. Such licences are issued through a coordination and clearance procedure involving other licensed users of the frequency bands in question and under the condition that non-operational licensees cannot claim protection from interference from other licensees nor cause interference to other licensees. There is no right of renewal at the end of the term of a non-operational licence. At the time of these awards, there may be a number of non-operational licences in force in the spectrum bands being awarded.
- 5.51 Interested parties should note that we may issue further non-operational licences in the spectrum bands being awarded following the completion of the Award Process.

Innovative uses of spectrum

- 5.52 In recent years, we have been approached by a number of organisations that wish to launch innovative commercial wireless services using spectrum for which there are no existing suitable licences.
- 5.53 We therefore published a consultation document titled ‘Innovative uses of spectrum’ on 9 October 2008⁵³. We are proposing to create a new type of licence to accommodate these requests. This “innovation licence” is designed to suit uses of spectrum that can benefit from access with more flexibility than a non-operational licence. We expect that it will often be used as an interim measure to allow organisations to launch commercial services more rapidly than would otherwise be possible. We are proposing that in general the licence has an indefinite duration, although licensees would need to accept short security of tenure and limited protection from interference.
- 5.54 Initially, we are proposing that innovation licences are only available in spectrum managed by public bodies (e.g. the Ministry of Defence – MOD). This may be extended to other bands in the future, although we would not expect to introduce innovation licences for spectrum that has already been liberalised and made tradable.

Sitfinder

- 5.55 Sitfinder⁵⁴ is the Government’s public access database of base stations. It is operated by us on behalf of the Government and is developed in cooperation with industry. The database provides information on operational base stations in the UK, and was established following the recommendations of the Stewart Report. All holders of licences offering end user services such as mobile telecommunications or wireless access are requested to provide the information specified in the Sitfinder database in relation to their networks on a voluntary basis.
- 5.56 In 2005, we received a request for the national Sitfinder dataset under the Freedom of Information Act 2000. As the data relates to radio emissions we considered the

⁵³ <http://www.ofcom.org.uk/consult/condocs/ius/main.pdf>

⁵⁴ <http://www.sitfinder.ofcom.org.uk/>

request under the Environmental Information Regulations 2004 and decided that there were exceptions to disclosing this information. In September 2007, the Information Tribunal upheld an earlier decision of the Information Commissioner directing us to release or publish the Sitefinder national dataset⁵⁵. Ofcom appealed this decision to the High Court; the appeal was heard on 8 April 2008. The High Court's judgement dismissed our appeal⁵⁶. We have been granted permission from the Court of Appeal to appeal this judgement.

R & TTE Directive

- 5.57 The R&TTE Directive requires manufacturers to make declarations that their radio and telecommunications terminal equipment conforms to the essential requirements of the Directive. All products within the scope of the Directive that are placed on the UK market must show "CE" marks. The European Commission's "Blue Guide" (Guide to the Implementation of Directives Based on the New Approach and Global Approach) lists other Directives that require CE marking of products and equipment. It is available from the Commission's website⁵⁷.

Administrated incentive pricing

- 5.58 The Award Process will determine the fee payable in respect of the Initial Term for each Licence. After the Initial Term, if a Licensee continues to hold the Licence, we may consider additional licence fees to be payable in line with our policy on spectrum pricing at that time.
- 5.59 The current spectrum pricing provisions are based on legal powers in the WT Act and the Communications Act. Our general approach to WT Act charges was set out in our Spectrum Pricing consultation in September 2004⁵⁸ and subsequent statement published in February 2005⁵⁹.
- 5.60 In 2006, we consulted⁶⁰ on variations to the current Wireless Telegraphy (Licence Charges) Regulations 2005⁶¹. Subsequent to that consultation, we have twice made Regulations amending licence charges, relating to PMSE, community radio and other minor changes to various licence classes⁶² and relating to satellite services licences.⁶³

Electronic Communications Code

- 5.61 The Electronic Communications Code (the "Code") is set out at schedule 2 to the Telecommunications Act 1984 as amended by schedule 3 to the Communications Act. The Code sets out various rights of Code operators including the ability to install their infrastructure on public highways without needing a specific licence to do so under the New Road and Street Works Act 1991. (Local authorities are permitted to establish permit schemes to better manage access to public highways under Part 3 of the Traffic Management Act 2004 and the Traffic Management Permit Schemes (England) Regulations 2007. The latter came into force on 1 April 2008). The Code

⁵⁵ http://www.informationtribunal.gov.uk/Documents/decisions/OFCOMvinfoComm_TMobile_4Aug07.pdf.

⁵⁶ Ofcom v Information Commissioner [2008] EWHC 1445

⁵⁷ <http://ec.europa.eu/enterprise/newapproach/legislation/guide/index.htm>

⁵⁸ http://www.ofcom.org.uk/consult/condocs/spec_pricing/

⁵⁹ http://www.ofcom.org.uk/consult/condocs/spec_pricing/statement/statement.pdf

⁶⁰ <http://www.ofcom.org.uk/consult/condocs/pricing06/>

⁶¹ <http://www.opsi.gov.uk/si/si2005/20051378.htm>

⁶² <http://www.ofcom.org.uk/consult/condocs/licencecharges/>

⁶³ <http://www.ofcom.org.uk/consult/condocs/wt/statement/>

also exempts operators from certain aspects of the Town and Country Planning regime in the form of Permitted Development.

- 5.62 We are permitted to grant Code powers under section 106 of the Communications Act to any applicant for the purposes of their providing an ECN or a system of conduits that would be made available for use by providers of ECNs. Applicants seeking Code powers are required to provide us with details in relation to their application and these are set out in our statement entitled: “The Granting of the Electronic Communications Code” (see http://www.ofcom.org.uk/telecoms/ioi/e_c_c/ecc.pdf).

Other regulation of ECNs and ECSs

- 5.63 It is the responsibility of interested parties who are considering using the spectrum bands being awarded to provide ECN and/or ECS to familiarise themselves with any relevant regulation. The same is also true of all other aspects of regulation, such as broadcasting regulation and competition law. It should be noted that all aspects of regulation are subject to change from time to time, including (without limitation) the relevant legislative framework and the nature of regulation within any given legislative framework. In addition, existing regulation may be subject to an appeal to the Competition Appeal Tribunal⁶⁴ or (where relevant) the subject of judicial review proceedings and as a result of any decision, or subsequent appeal, the underlying regulation, provision or decision may need to be re-considered.
- 5.64 In general and by way of example, interested parties should note:
- that there are General Conditions of Entitlement with which they may need to comply as described in more detail below;
 - a number of operators may be subject to conditions imposed as a result of a finding of Significant Market Power, which conditions may enable another operator to rely upon, e.g. a right to obtain network access (which may be of a specified type) and other obligations, such as regulated prices. Ofcom is currently at the start of conducting a number of market reviews, including wholesale and retail narrowband market reviews.
 - that if Licensees wish to purchase access and interconnection from operators of existing networks for services in markets where those operators do not have Significant Market Power, our expectation is that these services should be negotiated commercially;

Content services

- 5.65 Any person providing a content service (e.g. a television channel or radio station) must hold the appropriate licence under the Broadcasting Acts 1990 and 1996 (as amended), unless the service is provided by the BBC under the Charter and Agreement, or by a person appropriately authorised in another EU Member State. By way of example, the appropriate licence for a television channel carried on a television multiplex service would be a Digital Television Programme Service (DTPS) licence. It is an offence to provide a licensable service without the appropriate licence. Further information about the licensing of content services, including

⁶⁴ For example, a recent CAT decision regarding Ofcom’s decisions on changes to General Condition 18 will lead to changes to the approach taken to date on the issue of portability. The judgment can be found at: http://www.catribunal.org.uk/documents/Judgment_1094_180908.pdf

guidance notes for applicants, standard form licences and application forms, is available on our website under Ofcom Licensing / Television Broadcast Licensing⁶⁵.

General Conditions of Entitlement

- 5.66 All providers of ECNs and ECSs in the UK are covered by the General Conditions of Entitlement. Out of 22 conditions, some apply to particular categories of ECN or ECS provider, mainly depending on whether they provide public services or networks and whether they provide publicly available telephone services or public telephone networks.
- 5.67 It is the responsibility of any undertaking involved in providing an ECN or ECS to identify which conditions apply to it and to ensure that it complies with them. Further information can be found at http://www.ofcom.org.uk/telecoms/ioi/g_a_regime/qce/qcoe/?a=87101 and a copy of the consolidated General Conditions can be found at: http://www.ofcom.org.uk/telecoms/ioi/g_a_regime/qce/. This is usually updated quarterly.
- 5.68 It should be noted that from time to time we consult on proposals to change the General Conditions of Entitlement. Such proposals can usually be found on our website. Recent consultations include:
- review of alternative dispute resolution and complaints handling procedure⁶⁶;
 - protecting consumers from mis-selling of mobile telecommunications services⁶⁷;
- 5.69 We have also published recent statements setting out policies that we will implement in the following areas:
- telephone numbering;⁶⁸
 - Number Translation Services (NTS);⁶⁹
 - regulation of Voice over Internet Protocol services⁷⁰; with regard to access to emergency services;
 - metering and billing⁷¹; and
 - consumer protection test for telephone number allocation⁷².
- 5.70 In connection with telephone numbering and NTS, we have also published a number of wide-ranging statements and on 2 May 2008 two further consultations:
- telephone numbering;⁷³

⁶⁵ <http://www.ofcom.org.uk/tv/ifi/tvlicensing/>

⁶⁶ http://www.ofcom.org.uk/consult/condocs/alt_dis_res/condoc.pdf

⁶⁷ <http://www.ofcom.org.uk/consult/condocs/mobmisselling/mobmisselling.pdf>

⁶⁸ <http://www.ofcom.org.uk/consult/condocs/numberingreview/statement/> and <http://www.ofcom.org.uk/consult/condocs/numbering03/statement/>

⁶⁹ http://www.ofcom.org.uk/consult/condocs/nts_forward/statement/

⁷⁰ <http://www.ofcom.org.uk/consult/condocs/voip/voipstatement/voipstatement.pdf>

⁷¹ http://www.ofcom.org.uk/consult/condocs/metering_billing/mbstatement/

⁷² <http://www.ofcom.org.uk/consult/condocs/numberingcpt/statement/statement.pdf>

- Number Translation Services (NTS)⁷⁴;
- extending premium rate services regulation to 087 numbers⁷⁵; and
- changes to 0870 calls and modifications to the supporting regulations⁷⁶.

5.71 The Ofcom Annual Plan⁷⁷ contains details of our current and proposed activities that relate to this area.

EU Framework Review

5.72 On 13 November 2007 the European Commission published legislative proposals for the review of the EU regulatory framework for electronic communications.⁷⁸ These consist of two main Directives (one on “Better Regulation” and one on “Universal Service and User’s Rights”), and a Regulation establishing a new European Electronic Communications Market Authority (EECMA).

5.73 The proposals aim to push further harmonisation and consistency of regulation across Europe, tidy up current rules, strengthen the powers and political independence of national regulators, introduce functional separation as a new regulatory remedy, enhance consumer protection and simplify the market analysis process. The European Parliament adopted its first reading reports on the framework review package on 24 September. A Ministerial Council is to be held on 27 November 2008, where political agreement may be reached that would form the foundation of a formal Common Position. The current position is set out in the Information Society ‘Next Steps’ page of the Commission’s website.⁷⁹

Audiovisual Media Services Directive

5.74 The Audiovisual Media Services (AVMS) Directive was adopted in December 2007. It revises and updates the Television without Frontiers Directive which coordinates national regulations in a number of fields relating to the provision of cross-border broadcasting services. These include establishment criteria, advertising, sponsorship, tele-shopping, protection of minors, public order, right of reply, and the promotion of European programmes. Member States are required to ensure that television broadcasters under their jurisdiction comply with the programme standards set out in the Directive, although they can also impose additional domestic requirements. The AVMS Directive extends the scope to cover video on demand services, and introduces a two tier approach to regulation, imposing a stricter regime on television broadcasting services. Advertising rules have been liberalised (including a relaxation of the product placement regime), and broadcasters have been allowed greater flexibility as regards both amount and insertion of advertising. The Directive also recognises the benefits and encourages the use of self and co-regulation, supplemented by the promotion of media literacy, as effective means of implementation.

⁷³ <http://www.ofcom.org.uk/consult/condocs/numberingreview/statement/> and

<http://www.ofcom.org.uk/consult/condocs/numbering03/statement/>

⁷⁴ http://www.ofcom.org.uk/consult/condocs/nts_forward/statement

⁷⁵ <http://www.ofcom.org.uk/consult/condocs/087prs/prscondoc.pdf>

⁷⁶ <http://www.ofcom.org.uk/consult/condocs/0870calls/0870condoc.pdf>

⁷⁷ http://www.ofcom.org.uk/about/accoun/reports_plans/annual_plan0809/

⁷⁸ http://ec.europa.eu/information_society/policy/ecommm/tomorrow/reform/index_en.htm

⁷⁹ [eCommunications: Next steps | Europa - Information Society](http://ec.europa.eu/information_society/policy/ecommm/tomorrow/reform/index_en.htm)

- 5.75 The Department of Culture, Media and Sports has published on a consultation document seeking views on the Government's proposals for implementing the AVMS Directive in the UK⁸⁰. The consultation closes on 31 October 2008.

State Aid

- 5.76 State Aid is term that refers to forms of assistance from a public or relevant publicly-funded body, given to undertakings on a discretionary basis. since State Aid may have the potential to distort competition and affect trade between Member States, EU law provides rules setting out the circumstances in which it may be given, including specifying certain exceptions. The European Commission is tasked with oversight of Member States' compliance with these rules and must be notified of all relevant plans involving potential State Aid. The Commission may decide that a plan for State Aid may not be put into effect. State Aid which is given unlawfully may be subject to repayment by the recipient of the aid. An overview of state aid control is available on the Commission website⁸¹. Rules applicable to state aid are set out by the Commission and are also available on its website⁸². Particular rules also apply to the financing of public service broadcasting, for example those given in the Broadcasting Communication.
- 5.77 The Commission is presently reviewing the EU's State Aid rules through its 'State Aid Action Plan'. As part of this, it published a consultation on 10 January 2008⁸³ (Review of the Communication from the Commission on the application of State Aid rules to Public Service Broadcasting). Key issues of discussion were the public services remit in the new media environment and control of overcompensation. The Commission advised that having reviewed comments it may come forward later in 2008 with a proposal for a revised Broadcasting Communication, with a view to its adoption in 2009. We submitted a response to this consultation which is available at: <http://www.ofcom.org.uk/tv/ifi/stateaidrules/ofcomresponse.pdf>

Tax

- 5.78 Any party considering participation in the Award Process must take its own advice on the tax consequences of being awarded a Licence.
- 5.79 Payments for Wireless Telegraphy licence fees are not subject to VAT. The question of whether VAT should be payable in the case of the 3G mobile telephone Wireless Telegraphy Act licences auctioned in 2000 was heard by the European Court of Justice, which delivered its judgement on the matter on 26 June 2007⁸⁴. The Court held that in the case of these licences, the Government issued them in a regulatory capacity which was not an economic activity and consequently their issue was outside the scope of VAT.
- 5.80 The Court's judgement confirms the United Kingdom's interpretation of VAT legislation, namely that where a Wireless Telegraphy Act licence is issued by a public

⁸⁰ [Public consultation on implementing the EU audiovisual media services directive](#)

⁸¹ http://ec.europa.eu/comm/competition/state_aid/overview/index_en.cfm

⁸² <http://europa.eu/scadplus/leg/en/s12002.htm>

⁸³ <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/08/24>

⁸⁴ <http://curia.europa.eu/juris/cgi-bin/form.pl?lang=en&Submit=Rechercher&alldocs=alldocs&docj=docj&docop=docop&docor=docor&docjo=docjo&numaff=C-284/04&datefs=&datefe=&nomusuel=&domaine=&mots=&resmax=100>, and <http://curia.europa.eu/juris/cgi-bin/form.pl?lang=en&Submit=Rechercher&alldocs=alldocs&docj=docj&docop=docop&docor=docor&docjo=docjo&numaff=C-369/04&datefs=&datefe=&nomusuel=&domaine=&mots=&resmax=100>

authority pursuant to public law and in order to regulate the use of the radio frequencies, that activity is outside the scope of VAT.

- 5.81 If and to the extent that a Wireless Telegraphy licence is held to be issued in the circumstance which might make it subject to VAT, such VAT will be payable in addition to the licence fee (whether determined under an award process or under spectrum pricing where applicable).

Section 6

Application instructions

Application instructions

- 6.1 The procedure for making an application for a Licence is set out in the Wireless Telegraphy (Licence Award) (No.2) Regulations 2008 and the Wireless Telegraphy (Licence Award) (No.3) Regulations 2008, a draft of which is set out in the Annex to the Notice of our proposals to make regulations in connection with the first phase awards published on our website. As explained in section 4, when we have made the final regulations, we will announce details of the relevant time and date for interested parties to make an application.

Contacts and further information

Contacts for enquiries

- 6.2 Any further enquiries relating to this Memorandum and the Award Process should be addressed in writing and sent by email directly to us at spectrumawards@ofcom.org.uk. These should be marked for the attention of Robert Emson and also marked: Spectrum Auction Question – Geographic Interleaved Award.

Further information

- 6.3 The draft Regulations can be found on our website as described in paragraph 6.1 above.

Disclosure of further information

- 6.4 Following issue of this Memorandum, we have the discretion to publish further information and to publish questions and the answers provided. We may, however, exercise our discretion not to publish a particular question and answer, in whole or in part. We also reserve the right not to respond to such a question, and to publish relevant guidance arising from an answer to such a question. The identity of questioners will not be published without their permission. Applicants should note the provisions of the Regulations in relation to questions on Applicants.

Annex 1

Draft Licences

Draft licence: Lot 1

Wireless Telegraphy Act 2006

Office of Communications (Ofcom)

SPECTRUM ACCESS LICENCE 542.00 to 550.00 MHz Band

Licence no: [xxxxxxx]

Date: [date]

1. The Office of Communications (Ofcom) grants this licence to

[company name]
Company Reg No: [xxxxxxxx]
(the "Licensee")
[address 1]
[address 2]
[address 3]
[postcode]

to establish, install and use wireless telegraphy stations and/or wireless telegraphy apparatus as described in the Schedule 1 ("the Radio Equipment") subject to the terms set out below.

Licence Term

2. This Licence shall continue in force until revoked by Ofcom in accordance with Paragraph 3 below or surrendered by the Licensee.

Licence Revocation and Variation

3. Pursuant to Schedule 1, paragraph 8 of the Wireless Telegraphy Act 2006 (the "Act"), Ofcom may not revoke this Licence under Schedule 1, paragraph 6 of the Act except:

- (a) at the request of, or with the consent of, the Licensee;
- (b) in accordance with paragraph 8 of this Licence;
- (c) if there has been a breach of a term of the Licence;

- (d) if, in connection with the transfer or proposed transfer of rights and obligations arising by virtue of the Licence, there has been a breach of any provision of Regulations made by Ofcom under the powers conferred by section 30(1) and section 30(3) of the Act;
 - (e) if the Licensee has been found to the reasonable satisfaction of Ofcom to have been involved in any act, or omission of any act, constituting a breach of the Wireless Telegraphy (Licence Award) (No. 2) Regulations 2008 (the “Regulations”);
 - (f) in accordance with Schedule 1, paragraph 8(5) of the Act;
 - (g) if it appears to Ofcom to be necessary or expedient to revoke the Licence for the purposes of complying with a direction by the Secretary of State given to Ofcom under section 5 of the Act or section 5 of the Communications Act 2003; or
 - (h) for reasons related to the management of the radio spectrum, provided that in such case:
 - (i) this power to revoke may only be exercised after at least five (5) year’s notice is given in writing to the Licensee; and
 - (ii) such notice must expire after 30 October 2026.
4. Ofcom may only revoke or vary this Licence by notification in writing to the Licensee and in accordance with Schedule 1, paragraphs 6 and 7 of the Act.

Changes

- 5. This Licence is not transferable. The transfer of rights and obligations arising by virtue of this Licence may however be authorised in accordance with regulations made by Ofcom under powers conferred by section 30(1) and section 30(3) of the Act.
- 6. The Licensee must give prior notice to Ofcom in writing of any proposed change to the Licensee’s name and address from that recorded in the Licence.

Fees

- 7. Any licence fee in respect of this Licence is, for the avoidance of doubt, exclusive of any VAT which may ultimately be payable.
- 8. On or after the initial term the Licensee shall pay to Ofcom such sum(s) as may be provided for in regulations made by Ofcom under sections 12 and 13(2) of the Act, failing which Ofcom may revoke this Licence.
- 9. The Licensee shall also pay interest to Ofcom on any amount which is due under the terms of this Licence or provided for in any Regulations made by Ofcom under sections 12 and 13(2) of the Act from the date such amount falls due until the date of payment, calculated with reference to the Bank of England base rate from time to time. In accordance with section 15 of the Act any such amount and any such interest is recoverable by Ofcom.

10. If the Licence is surrendered or revoked, no refund, whether in whole or in part of any amount which is due under the terms of this Licence or provided for in any Regulations made by Ofcom under sections 12 and 13(2) of the Act will be made, except at the absolute discretion of Ofcom in accordance with regulation 44 of the Regulations or any regulation made under those sections of the Act (as the case may be).

Radio Equipment Use

11. The Licensee must ensure that the Radio Equipment is established, installed and used only in accordance with the provisions specified in Schedule 1 of this Licence. Any proposal to amend any detail specified in Schedule 1 of this Licence must be agreed with Ofcom in advance and implemented only after this Licence has been varied or reissued accordingly.
12. The Licensee must ensure that the Radio Equipment is operated in compliance with the terms of this Licence and is used only by persons who have been authorised in writing by the Licensee to do so and that such persons are made aware of, and of the requirement to comply with, the terms of this Licence.
13. Where the Licensee uses the Radio Equipment to provide a television multiplex service or a radio multiplex service the Licensee must also comply with the restrictions and requirements set out in Schedule 2 to this Licence.

Access and Inspection

14. The Licensee shall permit a person authorised by Ofcom:
 - (a) to have access to the Radio Equipment; and
 - (b) to inspect this Licence and to inspect, examine and test the Radio Equipment,at any and all reasonable times or, when in the opinion of that person an urgent situation exists, at any time to ensure the Radio Equipment is being used in accordance with the terms of this Licence.

Modification, Restriction and Closedown

15. A person authorised by Ofcom may require any of the radio stations or radio apparatus that comprise the Radio Equipment to be modified or restricted in use, or temporarily or permanently closed down immediately if in the opinion of the person authorised by Ofcom:
 - (a) a breach of a term of the Licence has occurred; and/or
 - (b) the use of the Radio Equipment is causing or contributing to undue interference to the use of other authorised radio equipment.
16. Ofcom may require any of the radio stations or radio apparatus that comprise the Radio Equipment to be modified or restricted in use, or temporarily closed down either immediately or on the expiry of such period as may be specified in the event of a national or local state of emergency being declared. Ofcom may only exercise this power after a written notice is served on the Licensee or a general notice applicable to holders of a named class of Licence is published.

Interpretation

17. In this Licence:

- (a) the establishment, installation and use of the Radio Equipment shall be interpreted as establishment and use of stations and installation and use of apparatus for wireless telegraphy as specified in section 8, paragraph 1 of the Act; and
- (b) the expression "interference" shall have the meaning given by section 115 of the Act;
- (c) the expressions "wireless telegraphy apparatus" and "wireless telegraphy station" shall have the meanings given by section 117 of the Act;
- (d) the expressions "television multiplex service" and "radio multiplex service" shall have the meaning given by section 241(2) Communications Act 2003 and section 258(2) of the Communications Act 2003 (as amended), respectively.
- (e) The schedules to this Licence form part of this Licence together with any subsequent schedules which Ofcom may issue as a variation to this Licence at a later date.
- (f) The Interpretation Act 1978 shall apply to this Licence as it applies to an Act of Parliament.

Signed by

For and on behalf of Ofcom

Dated [date]

Schedule 1

Schedule date: [date]

Licence Category: **Spectrum Access Licence 542.00 to 550.00 MHz Band
Geographically Limited Digital Terrestrial Transmitter Station**

1. Description of Radio Equipment licensed

In this Licence, the Radio Equipment means any radio transmitting and receiving stations and/or any radio apparatus that transmits in accordance with the following requirements of this schedule.

2. Interface requirements for the Radio Equipment use

Use of the radio equipment shall be in accordance with the following Interface Requirement:

IR 2022 Broadcast transmitters operating in frequency bands administered by Ofcom (98/34/EC Notification number: 2007/124/UK)

In addition, spurious emissions shall comply with the limits defined in EPT/ERC/REC 74-01 Unwanted Emissions in the Spurious Domain.

3. Cross-border coordination

The Licensee must ensure that the Radio Equipment is operated in compliance with such cross-border coordination and sharing procedures as may be notified to the Licensee by Ofcom.

4. Permitted frequencies

During the period from the date of completion of digital switchover at the Wenvoe transmission site to the date of completion of digital switchover at the Ridge Hill transmission site, the Licensee shall comply with the technical specification set out in sub-paragraph (1) below.

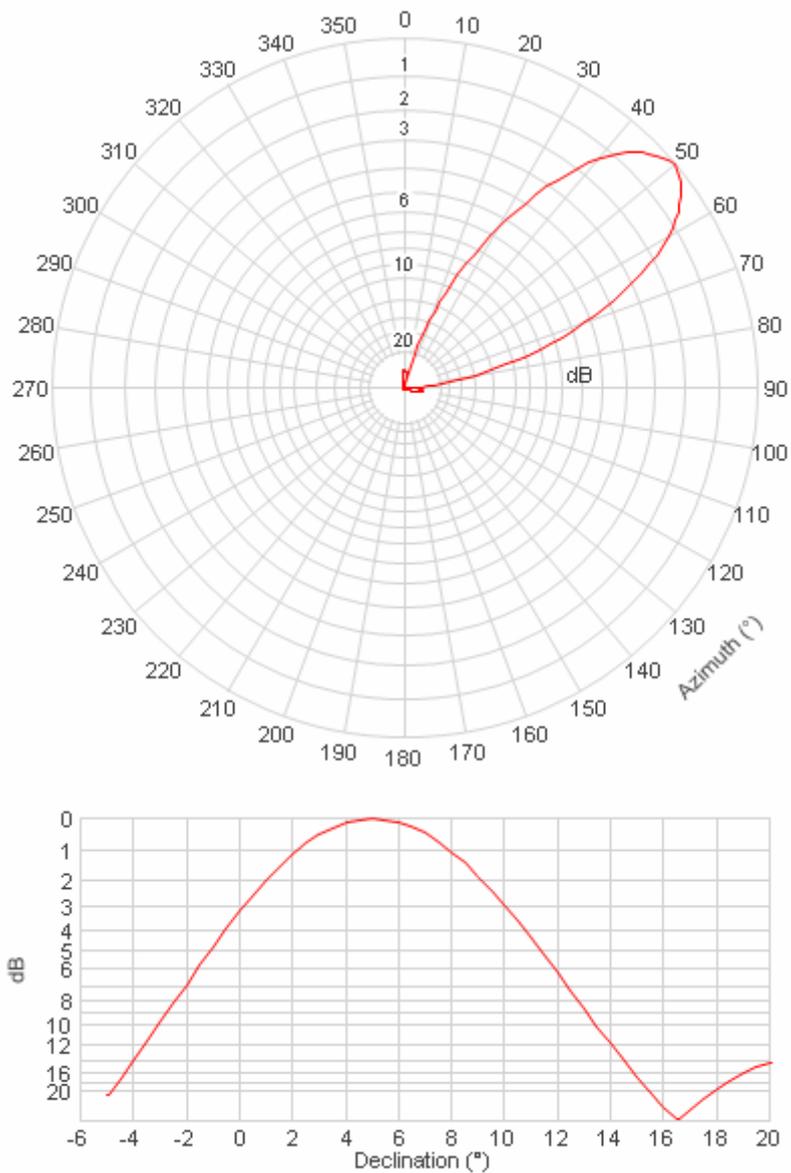
From the date of completion of digital switchover at the Ridge Hill transmission site, the Licensee shall comply with the technical specification set out in sub-paragraph (2) below.

Ofcom shall notify the Licensee in advance of the date of completion of digital switchover at the Wenvoe transmission site and at the Ridge Hill transmission site, respectively.

(1) Technical specification (transitional):

Station: Wenvoe
Location: ST110742
Antenna Height a.g.l: 135m
Channel (frequency range): 55 (742-750MHz)
Max ERP: 1kW
Polarisation: Horizontal

Wenvoe transitional antenna template

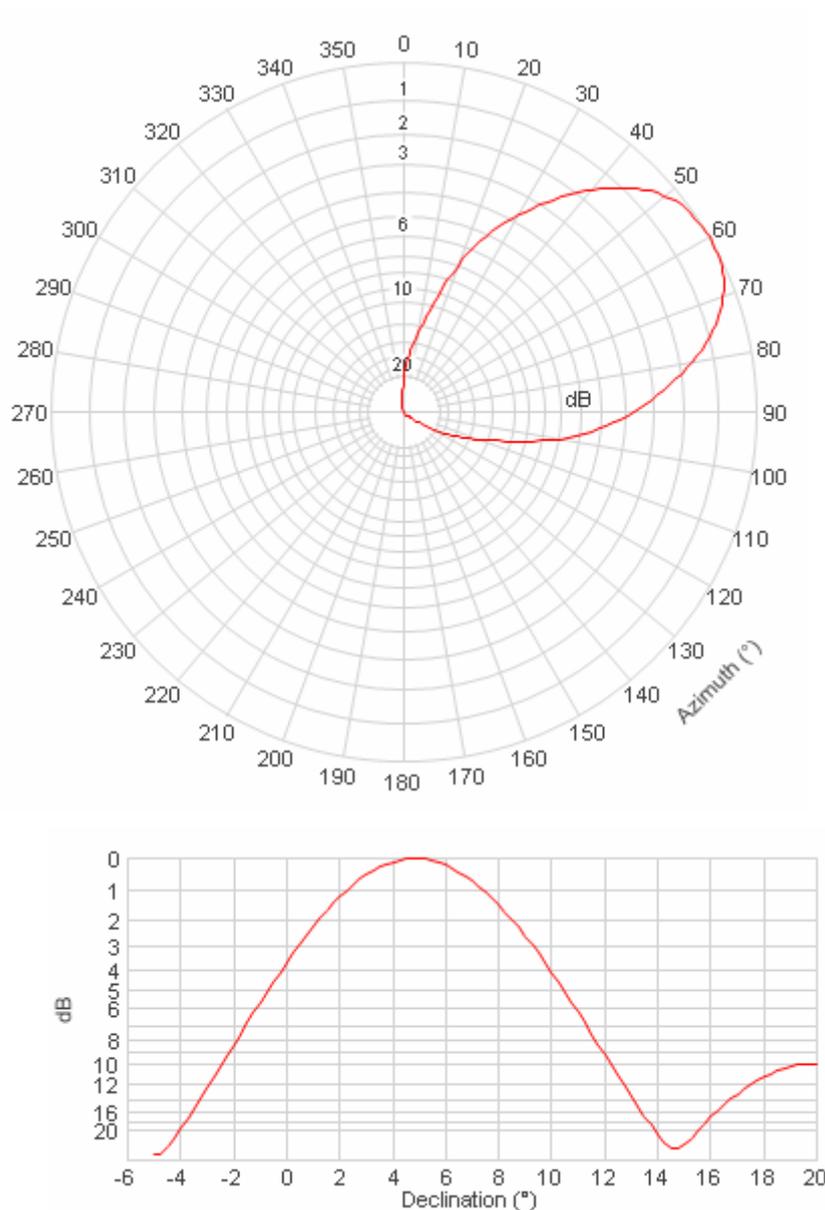


(2) Technical specification (final)

Station: Wenvoe
Location: ST110742

Antenna Height a.g.l	135m
Channel (frequency range)	30 (542-550MHz)
Max ERP:	1kW
Polarisation:	Horizontal

Wenvoe final antenna template



5. Information provision

- (1) During the period that this Licence remains in force, unless consent has otherwise been given by Ofcom, the Licensee shall compile and maintain accurate written records of:
 - (a) the following details relating to the Radio Equipment:
 - (i) postal address (including post code);

- (ii) National Grid Reference (to 100 metres resolution);
 - (iii) antenna height (above ground level) and type, bearing east of true north;
 - (iv) radio frequencies which the Radio Equipment is able to use and radio frequencies which the Radio Equipment uses;
 - (v) the technical characteristics of the Radio Equipment both in terms of transmission and reception of wireless telegraphy;
- (b) a statement of the estimated number of receivers and/or the number of subscribing customers;

and the Licensee must produce these records if requested by a person authorised by Ofcom.

- (2) The Licensee shall inform Ofcom of the address of the premises at which this Licence and the information detailed at sub-paragraph 3(a) above shall be kept.
- (3) The Licensee must submit to Ofcom copies of such parts of the records detailed in sub-paragraph 1(a) above at such intervals as Ofcom shall notify to the Licensee. Without prejudice to any information which Ofcom is required by law to publish or disclose, Ofcom may, from time to time, publish such extracts of this information as it sees fit, regarding
- (a) the Radio Equipment which is operational;
 - (b) the location of the Radio Equipment, aggregated by outward postcode;
 - (c) the frequencies used by the Radio Equipment.
- (4) The Licensee must also submit to Ofcom in such manner and at such times, all information relating to the establishment, installation or use of the Radio Equipment, whether stored in hard copy or electronic form, as reasonably requested for the purposes of verifying compliance with this Licence, for statistical purposes and more generally for the purpose of ensuring that Ofcom can perform its spectrum management functions.

6. Interpretation

In this Schedule 1:

“a.g.l.” means above ground level.

“a.m.s.l.” means above mean sea level.

“e.r.p.” means the effective radiated power. This is the power fed to the antenna multiplied by the maximum gain of the antenna with respect to a half-wave dipole.

“dBW” means the power level in decibels (logarithmic scale) referenced against 1 Watt (i.e. a value of 0 dBw is 1 W).

“out of band emissions” means radio frequency emissions generated by the Radio Equipment and radiated into the frequency(s) adjacent (in terms of frequency) to the Licensee’s Permitted Frequency(s).

Schedule 2

The restrictions and requirements set out in this Schedule 2 apply pursuant to Condition 13 of the Licence where the Licensee uses the Radio Equipment authorised under this Licence to provide a television multiplex service or a radio multiplex service.

1. Local authorities and political bodies

- (1) Subject to sub-paragraph (2), the following persons are not permitted to provide a television multiplex service or a radio multiplex service:
- (a) a local authority;
 - (b) a body whose objects are wholly or mainly of a political nature;
 - (c) a body affiliated to a body falling within paragraph (b);
 - (d) an individual who is an officer of a body falling within paragraph (b) or (c);
 - (e) a body corporate which is an associate of a body corporate falling within paragraph (b) or (c);
 - (f) a body corporate in which a body falling within any of paragraphs (a) to (c) and (e) is a participant with more than a 5 per cent interest;
 - (g) a body corporate which is controlled by a body corporate falling within paragraph (f);
 - (h) a body which is controlled by a person falling within any of paragraphs (a) to (e) or by two or more such persons taken together; and
 - (i) a body corporate in which a body falling within paragraph (h), other than one which is controlled:
 - (i) by a person falling within paragraph (d), or
 - (ii) by two or more such persons taken together, is a participant with more than a 5 per cent interest.
- (2) Where a service is provided exclusively for the purposes of carrying out the functions of a local authority under section 142 of the Local Government Act 1972 (provision by local authorities of information relating to their activities), a person is not permitted to provide a television multiplex service or radio multiplex service by virtue of sub-paragraph (1) in relation to a licence to provide that service only if he would not be permitted to do so disregarding paragraph (a) of that sub-paragraph.

2. Religious bodies

- (1) The following persons are not permitted to provide a television multiplex service or radio multiplex service:
- (a) a body whose objects are wholly or mainly of a religious nature;
 - (b) a body which is controlled by a body falling within paragraph (a) or by two or more such bodies taken together;
 - (c) a body which controls a body falling within paragraph (a);
 - (d) a body corporate which is an associate of a body corporate falling within paragraph (a), (b) or (c);
 - (e) a body corporate in which a body falling within any of paragraphs (a) to (d) is a participant with more than a 5 per cent interest;
 - (f) an individual who is an officer of a body falling within paragraph (a); and

- (g) a body which is controlled by an individual falling within paragraph (f) or by two or more such individuals taken together.

3. Undue influence

- (1) A person is not permitted to provide a television multiplex service or radio multiplex service if in the opinion of Ofcom:
 - (a) any relevant body is, by the giving of financial assistance or otherwise, exerting influence over the activities of that person, and
 - (b) that influence has led, is leading or is likely to lead to results which are adverse to the public interest.
- (2) In sub-paragraph (1) "relevant body"
 - (a) in relation to the provision of television multiplex services means a person falling within paragraph 1(1)(a) to (f) or (i) above or a body which is controlled
 - (i) by a person falling within paragraph 1(1)(a) to (e) above, or
 - (ii) by two or more such persons taken together; and
 - (b) in relation to the provision of radio multiplex services means a person falling within paragraph 1(1)(a) to (f) or (i) or a body which is controlled:
 - (i) by a person falling within paragraph 1(1)(a) to (e) above;
 - (ii) by two or more such persons taken together.

4. General provision of information to Ofcom

- (1) The Licensee shall furnish to Ofcom in such manner and at such times as Ofcom may reasonably require such documents, accounts, returns, estimates, reports, notices or other information as Ofcom may (require for the purpose of exercising the functions assigned to it under the Act (but without prejudice to the generality of the foregoing):
 - (a) a declaration as to its corporate structure in such form and at such times as Ofcom shall specify; and
 - (b) such information as Ofcom may reasonably require from time to time for the purposes of determining whether the Licensee is on any ground not permitted to provide a television or radio multiplex service by virtue of any of the provisions within paragraphs 1, 2 and 3 of this Schedule 2.

5. Changes

Where the Licensee is a body corporate, the Licensee shall notify Ofcom:

- (1) (a) of proposals affecting shareholdings in the Licensee or any body corporate which controls the Licensee, or the directors of the Licensee or the directors of any body corporate which controls the Licensee, and of any proposals to enter into any arrangements of the type referred to in paragraph 7 (2) below, by giving advance notice of such proposals where they are known to the Licensee as

soon as reasonably practicable where such proposals would constitute a change in the persons having control over the Licensee within the meaning of paragraph 8 below; and

- (b) of changes, transactions or events affecting shareholdings in the Licensee or any body corporate which controls the Licensee, or the directors of the Licensee or the directors of any body corporate which controls the Licensee (irrespective of whether proposals for them have fallen to be notified) within 28 days of the Licensee becoming aware of any such change, transaction or event and where such change, transaction or event would constitute a change in the persons having control over the Licensee within the meaning of paragraph 8 below.
- (2) (a) The Licensee shall notify Ofcom within 28 days if any person:
 - (i) holding or being beneficially entitled to 50 per cent. of the equity share capital in the Licensee or in any body corporate which controls the Licensee; or
 - (ii) possessing 50 per cent. of the voting power in the Licensee or any body corporate which controls the Licensee, enters into any arrangement with any other participant in the Licensee or in any such body corporate which controls the Licensee as to the manner in which any voting power in the body possessed by either of them is to be exercised, or as to the omission by either of them to exercise such voting power.
 - (b) For the purposes of paragraph 5 (2) (a):
 - (i) **"arrangement"** includes any agreement or arrangement, whether or not it is, or is intended to be, legally enforceable;
 - (ii) a person shall be treated as holding, or being beneficially entitled to, any equity share capital which is held by a body corporate which he controls or to which such a body corporate is beneficially entitled, and as possessing any voting power possessed by such a body corporate; and
 - (iii) **"participant"**, in relation to a body corporate, means a person who holds or is beneficially entitled to shares in that body or who possesses voting power in that body.

6. Interoperability

The Licensee shall ensure that any labelling of transport stream components, including logical channel numbers, service identification and network identification, used in the provision of a television multiplex service or radio multiplex service, does not conflict with the labelling used by other operators providing technically compatible services.

7. Interpretation

(1) In this Schedule 2:

"control"

- (a) in relation to a body corporate, shall be construed in accordance with subparagraph (3), and

- (b) in relation to any body other than a body corporate, means the power of a person to secure, by whatever means and whether directly or indirectly, that the affairs of the first-mentioned body are conducted in accordance with the wishes of that person;

“digital sound programme service” (“DTPS”) has the meaning given in section 60(1) of the Broadcasting Act 1996 (as amended);

“digital television additional service” (“DTAS”) has the meaning given in section has the meaning given in Section 24(1) of the Broadcasting Act 1996 (as amended);

“digital television programme service” (“DSPS”) has the meaning given in section in Section 1(4) of the Broadcasting Act 1996 (as amended);

"equity share capital" has the same meaning as in the Companies Act 1985;

"local authority"

- (a) in relation to England, means any of the following, that is to say, the council of a county, district or London borough, the Common Council of the City of London and the Council of the Isles of Scilly;
- (b) in relation to Wales, means a county council or county borough council;
- (c) in relation to Scotland, means a council constituted under section 2 of the Local Government etc (Scotland) Act 1994; and
- (d) in relation to Northern Ireland, means a district council;

“logical channel number” means the unique identification number for each DTPS, DTAS or DSPS carried on a television multiplex service or radio multiplex service, which assigns the service to a position on the electronic programme guide;

“network identification” means the unique label which identifies each television multiplex service or radio multiplex service;

"participant", in relation to a body corporate, means a person who holds or is beneficially entitled to shares in that body or who possesses voting power in that body;

“service identification” means the unique label which identifies each DTPS, DTAS or DSPS on a multiplex.

“transport stream components” means the individual packets of data that together make up the transport stream that carries all the services and service information within a television multiplex service;

- (2) For the purpose of determining the persons who are the associates of a body corporate for the purposes of this Schedule 2:
- (a) an individual shall be regarded as an associate of a body corporate if he is a director of that body corporate, and
- (b) a body corporate and another body corporate shall be regarded as associates of each other if one controls the other or if the same person controls both.

- (3) For the purpose of determining the persons who are an individual's associates for the purposes of this Schedule, the following persons shall be regarded as associates of each other, namely:
- (a) any individual and that individual's husband or wife or civil partner and any relative, or husband or wife or civil partner of a relative, of that individual or of that individual's husband or wife or civil partner;
 - (b) any individual and any body corporate of which that individual is a director;
 - (c) any person in his capacity as trustee of a settlement and the settlor or grantor and any person associated with the settlor or grantor;
 - (d) persons carrying on business in partnership and the husband or wife or civil partner and relatives of any of them;
 - (e) any two or more persons acting together to secure or exercise control of a body corporate or other association or to secure control of any enterprise or assets;

and in this sub-paragraph "relative" means a brother, sister, uncle, aunt, nephew, niece, lineal ancestor or descendant (the stepchild or illegitimate child of any person, or anyone adopted by a person, whether legally or otherwise, as his child, being regarded as a relative or taken into account to trace a relationship in the same way as that person's child); and references to a wife or husband shall include a former wife or husband and a reputed wife or husband and references to a civil partner shall include a former civil partner and a reputed civil partner.

- (4) For the purposes of this Schedule a person controls a body corporate if:
- (a) he holds, or is beneficially entitled to, more than 50 per cent of the equity share capital in the body, or possesses more than 50 per cent of the voting power in it; or
 - (b) although he does not have such an interest in the body, it is reasonable, having regard to all the circumstances, to expect that he would (if he chose to) be able in most cases or in significant respects, by whatever means and whether directly or indirectly, to achieve the result that affairs of the body are conducted in accordance with his wishes; or
 - (c) he holds, or is beneficially entitled to, 50 per cent of the equity share capital in that body, or possesses 50 per cent of the voting power in it, and an arrangement exists between him and any other participant in the body as to the manner in which any voting power in the body possessed by either of them is to be exercised, or as to the omission by either of them to exercise such voting power.
- (5) For the purposes of sub-paragraph (4)(c):
- (a) "arrangement" includes any agreement or arrangement, whether or not it is, or is intended to be, legally enforceable, and
 - (b) a person shall be treated:
 - (i) as holding, or being beneficially entitled to, any equity share capital which is held by a body corporate which he controls or to which such a body corporate is beneficially entitled, and
 - (ii) as possessing any voting power possessed by such a body corporate.

- (6) For the purposes of any provision of this Schedule which refers to a body controlled by two or more persons or bodies of any description taken together, the persons or bodies in question shall not be regarded as controlling the body by virtue of paragraph (b) of sub-paragraph (4) unless they are acting together in concert.
- (7) In this Schedule any reference to a participant with more than a 5 per cent interest in a body corporate is a reference to a person who:
 - (a) holds or is beneficially entitled to more than 5 per cent of the shares in that body, or
 - (b) possesses more than 5 per cent of the voting power in that body.
- (8) Sub-paragraph (7) shall have effect subject to the necessary modifications in relation to other references in this Schedule:
 - (a) to an interest of more than a specified percentage in a body corporate, or
 - (b) to an interest of a specified percentage or more in a body corporate.

8.

- (1) Subject to sub-paragraph 9(2) any reference in paragraph 8 above to a person:
 - (a) holding or being entitled to shares, or any amount of the shares or equity share capital, in a body corporate, or
 - (b) possessing voting power, or any amount of the voting power, in a body corporate,

is a reference to his doing so, or being so entitled, whether alone or jointly with one or more other persons and whether directly or through one or more nominees.
- (2) For the purposes of this Schedule, a person's holding of shares, or possession of voting power, in a body corporate shall be disregarded if, or to the extent that:
 - (a) he holds the shares concerned
 - (i) as a nominee,
 - (ii) as a custodian (whether under a trust or by a contract), or
 - (iii) under an arrangement pursuant to which he has issued, or is to issue, depositary receipts, in respect of the shares concerned, and
 - (b) he is not entitled to exercise or control the exercise of voting rights in respect of the shares concerned.
- (3) For the purposes of sub-paragraph (2)(b):
 - (a) a person is not entitled to exercise or control the exercise of voting rights in respect of shares if he is bound (whether by contract or otherwise) not to exercise the voting rights, or not to exercise them otherwise than in accordance with the instructions of another, and

- (b) voting rights which a person is entitled to exercise or of which he is entitled to control the exercise only in certain circumstances shall be taken into account only when those circumstances have arisen and for as long as they continue to obtain.

9.

For the purposes of this Schedule the following persons shall be treated as connected with a particular person:

- (a) a person who controls that person,
- (b) an associate of that person or of a person falling within paragraph (a),
and
- (c) a body which is controlled by that person or by an associate of that person.

Draft licence: Lot 2

Wireless Telegraphy Act 2006

Office of Communications (Ofcom)

SPECTRUM ACCESS LICENCE 758.00 to 766.00 MHz Band

Licence no: [xxxxxxx]

Date: [date]

18. The Office of Communications (Ofcom) grants this licence to

[company name]
Company Reg No: [xxxxxxxx]
(the "Licensee")
[address 1]
[address 2]
[address 3]
[postcode]

to establish, install and use wireless telegraphy stations and/or wireless telegraphy apparatus as described in the Schedule 1 ("the Radio Equipment") subject to the terms set out below.

Licence Term

19. This Licence shall continue in force until revoked by Ofcom in accordance with Paragraph 3 below or surrendered by the Licensee.

Licence Revocation and Variation

20. Pursuant to Schedule 1, paragraph 8 of the Wireless Telegraphy Act 2006 (the "Act"), Ofcom may not revoke this Licence under Schedule 1, paragraph 6 of the Act except:

- (i) at the request of, or with the consent of, the Licensee;
- (j) in accordance with paragraph 8 of this Licence;
- (k) if there has been a breach of a term of the Licence;
- (l) if, in connection with the transfer or proposed transfer of rights and obligations arising by virtue of the Licence, there has been a breach of any provision of Regulations made by Ofcom under the powers conferred by section 30(1) and section 30(3) of the Act;

- (m) if the Licensee has been found to the reasonable satisfaction of Ofcom to have been involved in any act, or omission of any act, constituting a breach of the Wireless Telegraphy (Licence Award) (No. 3) Regulations 2008 (the “Regulations”);
- (n) in accordance with Schedule 1, paragraph 8(5) of the Act;
- (o) if it appears to Ofcom to be necessary or expedient to revoke the Licence for the purposes of complying with a direction by the Secretary of State given to Ofcom under section 5 of the Act or section 5 of the Communications Act 2003; or
- (p) for reasons related to the management of the radio spectrum, provided that in such case:
 - (i) this power to revoke may only be exercised after at least five (5) years notice is given in writing to the Licensee; and
 - (ii) such notice must expire after 30 October 2026.

21. Ofcom may only revoke or vary this Licence by notification in writing to the Licensee and in accordance with Schedule 1, paragraphs 6 and 7 of the Act.

Changes

22. This Licence is not transferable. The transfer of rights and obligations arising by virtue of this Licence may however be authorised in accordance with regulations made by Ofcom under powers conferred by section 30(1) and section 30(3) of the Act.
23. The Licensee must give prior notice to Ofcom in writing of any proposed change to the Licensee’s name and address from that recorded in the Licence.

Fees

24. Any licence fee in respect of this Licence is, for the avoidance of doubt, exclusive of any VAT which may ultimately be payable.
25. On or after the initial term the Licensee shall pay to Ofcom such sum(s) as may be provided for in regulations made by Ofcom under sections 12 and 13(2) of the Act, failing which Ofcom may revoke this Licence.
26. The Licensee shall also pay interest to Ofcom on any amount which is due under the terms of this Licence or provided for in any Regulations made by Ofcom under sections 12 and 13(2) of the Act from the date such amount falls due until the date of payment, calculated with reference to the Bank of England base rate from time to time. In accordance with section 15 of the Act any such amount and any such interest is recoverable by Ofcom.
27. If the Licence is surrendered or revoked, no refund, whether in whole or in part of any amount which is due under the terms of this Licence or provided for in any Regulations made by Ofcom under sections 12 and 13(2) of the Act will be made, except at the absolute discretion of Ofcom in accordance with regulation 44 of the Regulations or any regulation made under those sections of the Act (as the case may be).

Radio Equipment Use

28. The Licensee must ensure that the Radio Equipment is established, installed and used only in accordance with the provisions specified in Schedule 1 of this Licence. Any proposal to amend any detail specified in Schedule 1 of this Licence must be agreed with Ofcom in advance and implemented only after this Licence has been varied or reissued accordingly.
29. The Licensee must ensure that the Radio Equipment is operated in compliance with the terms of this Licence and is used only by persons who have been authorised in writing by the Licensee to do so and that such persons are made aware of, and of the requirement to comply with, the terms of this Licence.
30. Where the Licensee uses the Radio Equipment to provide a television multiplex service or a radio multiplex service the Licensee must also comply with the restrictions and requirements set out in Schedule 2 to this Licence.

Access and Inspection

31. The Licensee shall permit a person authorised by Ofcom:
 - (c) to have access to the Radio Equipment; and
 - (d) to inspect this Licence and to inspect, examine and test the Radio Equipment,at any and all reasonable times or, when in the opinion of that person an urgent situation exists, at any time to ensure the Radio Equipment is being used in accordance with the terms of this Licence.

Modification, Restriction and Closedown

32. A person authorised by Ofcom may require any of the radio stations or radio apparatus that comprise the Radio Equipment to be modified or restricted in use, or temporarily or permanently closed down immediately if in the opinion of the person authorised by Ofcom:
 - (c) a breach of a term of the Licence has occurred; and/or
 - (d) the use of the Radio Equipment is causing or contributing to undue interference to the use of other authorised radio equipment.
33. Ofcom may require any of the radio stations or radio apparatus that comprise the Radio Equipment to be modified or restricted in use, or temporarily closed down either immediately or on the expiry of such period as may be specified in the event of a national or local state of emergency being declared. Ofcom may only exercise this power after a written notice is served on the Licensee or a general notice applicable to holders of a named class of Licence is published.

Interpretation

34. In this Licence:

- (g) the establishment, installation and use of the Radio Equipment shall be interpreted as establishment and use of stations and installation and use of apparatus for wireless telegraphy as specified in section 8, paragraph 1 of the Act; and
- (h) the expression "interference" shall have the meaning given by section 115 of the Act;
- (i) the expressions "wireless telegraphy apparatus" and "wireless telegraphy station" shall have the meanings given by section 117 of the Act;
- (j) the expressions "television multiplex service" and "radio multiplex service" shall have the meaning set out in section 241(2) Communications Act 2003 and section 258(2) of the Communications Act 2003 (as amended), respectively.
- (k) The schedules to this Licence form part of this Licence together with any subsequent schedules which Ofcom may issue as a variation to this Licence at a later date.
- (l) The Interpretation Act 1978 shall apply to this Licence as it applies to an Act of Parliament.

Signed by

For and on behalf of Ofcom

Dated [date]

Schedule 1

Schedule date: [date]

Licence Category: **Spectrum Access Licence 758.00 to 766.00 MHz Band
Geographically Limited Digital Terrestrial Transmitter Station**

1. Description of Radio Equipment licensed

In this Licence, the Radio Equipment means any radio transmitting and receiving stations and/or any radio apparatus that transmits in accordance with the following requirements of this schedule.

2. Interface requirements for the Radio Equipment use

Use of the radio equipment shall be in accordance with the following Interface Requirement:

IR 2022 Broadcast transmitters operating in frequency bands administered by Ofcom (98/34/EC Notification number: 2007/124/UK)

In addition, spurious emissions shall comply with the limits defined in EPT/ERC/REC 74-01 Unwanted Emissions in the Spurious Domain.

3. Cross-border coordination

The Licensee must ensure that the Radio Equipment is operated in compliance with such cross-border coordination and sharing procedures as may be notified to the Licensee by Ofcom.

4. Permitted frequencies

During the period from the date of completion of digital switchover at the Winter Hill transmission site to the date of completion of digital switchover at The Wrekin transmission site, the Licensee shall comply with the technical specification set out in sub-paragraph (1) below.

From the date of completion of digital switchover at The Wrekin transmission site, the Licensee shall comply with the technical specification set out in sub-paragraph (2) below.

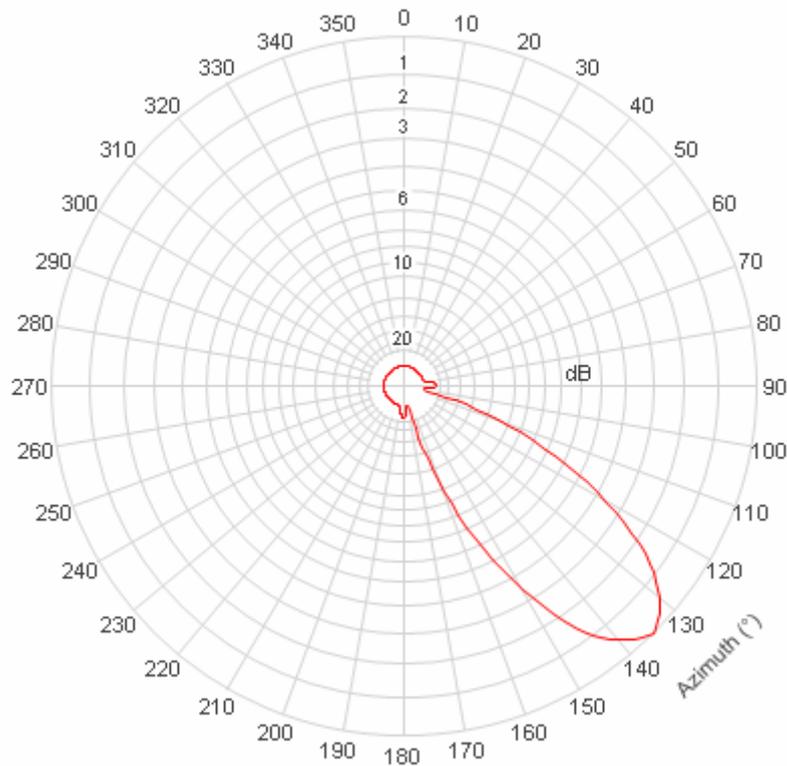
Ofcom shall notify the Licensee in advance of the date of completion of digital switchover at the Winter Hill transmission site and at The Wrekin transmission site, respectively.

(1) Technical specification (transitional):

Station: Winter Hill

Location: SD660144
Antenna Height a.g.l 140m
Channel (frequency range) 57 (758-766MHz)
Max ERP: 1kW
Polarisation: Horizontal

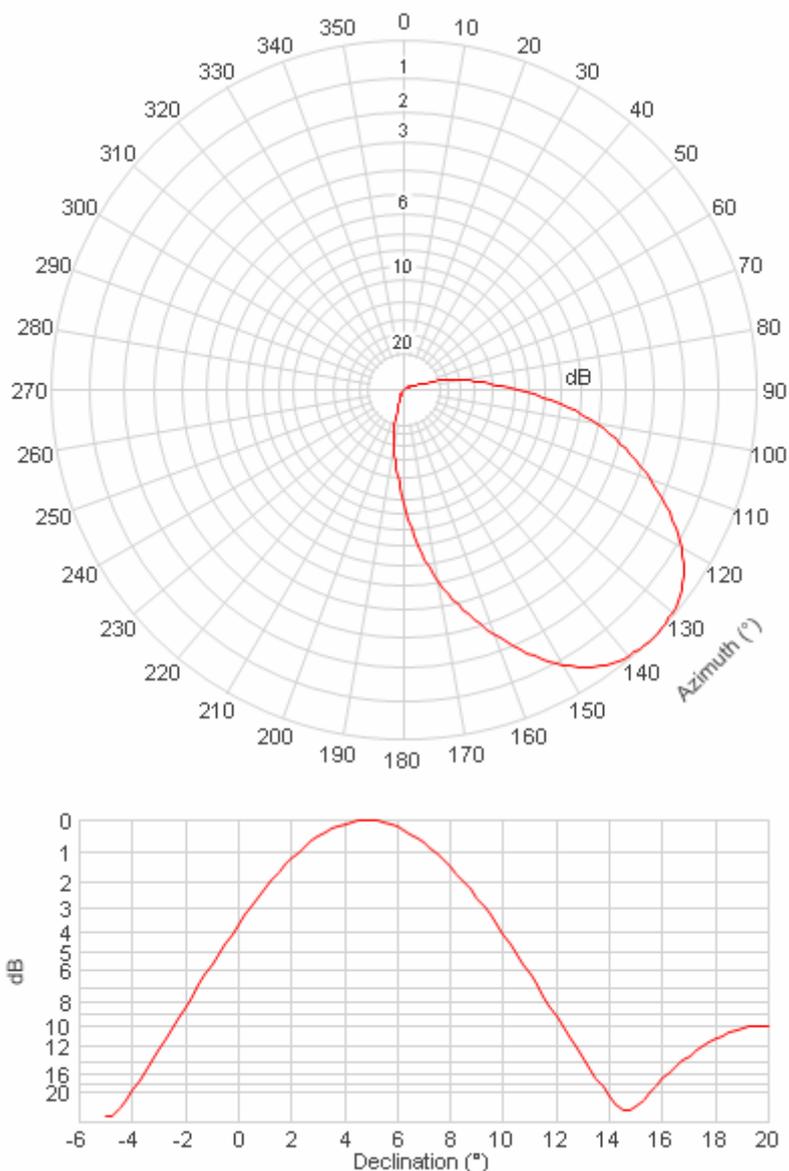
Winter Hill transitional antenna template



(2) Technical specification (final)

Station: Winter Hill
Location: SD660144
Antenna Height a.g.l 140m
Channel (frequency range) 57 (758-766MHz)
Max ERP: 1kW
Polarisation: Horizontal

Winter Hill final antenna template



5. Information provision

- (1) During the period that this Licence remains in force, unless consent has otherwise been given by Ofcom, the Licensee shall compile and maintain accurate written records of:
 - (a) the following details relating to the Radio Equipment:
 - (i) postal address (including post code);
 - (ii) National Grid Reference (to 100 metres resolution);
 - (iii) antenna height (above ground level) and type, bearing east of true north;
 - (iv) radio frequencies which the Radio Equipment is able to use and radio frequencies which the Radio Equipment uses;
 - (v) the technical characteristics of the Radio Equipment both in terms of transmission and reception of wireless telegraphy;

- (b) a statement of the estimated number of receivers and/or the number of subscribing customers;

and the Licensee must produce these records if requested by a person authorised by Ofcom.

- (2) The Licensee shall inform Ofcom of the address of the premises at which this Licence and the information detailed at sub-paragraph 3(a) above shall be kept.
- (3) The Licensee must submit to Ofcom copies of such parts of the records detailed in sub-paragraph 1(a) above at such intervals as Ofcom shall notify to the Licensee. Without prejudice to any information which Ofcom is required by law to publish or disclose, Ofcom may, from time to time, publish such extracts of this information as it sees fit, regarding
 - (a) the Radio Equipment which is operational;
 - (b) the location of the Radio Equipment, aggregated by outward postcode;
 - (c) the frequencies used by the Radio Equipment.
- (4) The Licensee must also submit to Ofcom in such manner and at such times, all information relating to the establishment, installation or use of the Radio Equipment, whether stored in hard copy or electronic form, as reasonably requested for the purposes of verifying compliance with this Licence, for statistical purposes and more generally for the purpose of ensuring that Ofcom can perform its spectrum management functions.

7. Interpretation

In this Schedule 1:

“a.g.l.” means above ground level.

“a.m.s.l.” means above mean sea level.

“e.r.p.” means the effective radiated power. This is the power fed to the antenna multiplied by the maximum gain of the antenna with respect to a half-wave dipole.

“dBW” means the power level in decibels (logarithmic scale) referenced against 1 Watt (i.e. a value of 0 dBw is 1 W).

“out of band emissions” means radio frequency emissions generated by the Radio Equipment and radiated into the frequency(s) adjacent (in terms of frequency) to the Licensee’s Permitted Frequency(s).

Schedule 2

The restrictions and requirements set out in this Schedule 2 apply pursuant to Condition 13 of the Licence where the Licensee uses the Radio Equipment authorised under this Licence to provide a television multiplex service or a radio multiplex service.

1. Local authorities and political bodies

- (1) Subject to sub-paragraph (2), the following persons are not permitted to provide a television or radio multiplex service:
 - (a) a local authority;
 - (b) a body whose objects are wholly or mainly of a political nature;
 - (c) a body affiliated to a body falling within paragraph (b);
 - (d) an individual who is an officer of a body falling within paragraph (b) or (c);
 - (e) a body corporate which is an associate of a body corporate falling within paragraph (b) or (c);
 - (f) a body corporate in which a body falling within any of paragraphs (a) to (c) and (e) is a participant with more than a 5 per cent interest;
 - (g) a body corporate which is controlled by a body corporate falling within paragraph (f);
 - (h) a body which is controlled by a person falling within any of paragraphs (a) to (e) or by two or more such persons taken together; and
 - (i) a body corporate in which a body falling within paragraph (h), other than one which is controlled:
 - (i) by a person falling within paragraph (d), or
 - (ii) by two or more such persons taken together,is a participant with more than a 5 per cent interest.
- (2) Where a service is provided exclusively for the purposes of carrying out the functions of a local authority under section 142 of the Local Government Act 1972 (provision by local authorities of information relating to their activities), a person is not permitted to provide a television multiplex service or radio multiplex service by virtue of sub-paragraph (1) in relation to a licence to provide that service only if he would not be permitted to do so disregarding paragraph (a) of that sub-paragraph.

2. Religious bodies

- (1) The following persons are not permitted to provide a television multiplex service or radio multiplex service:
 - (a) a body whose objects are wholly or mainly of a religious nature;
 - (b) a body which is controlled by a body falling within paragraph (a) or by two or more such bodies taken together;
 - (c) a body which controls a body falling within paragraph (a);
 - (d) a body corporate which is an associate of a body corporate falling within paragraph (a), (b) or (c);
 - (e) a body corporate in which a body falling within any of paragraphs (a) to (d) is a participant with more than a 5 per cent interest;
 - (f) an individual who is an officer of a body falling within paragraph (a); and

- (g) a body which is controlled by an individual falling within paragraph (f) or by two or more such individuals taken together.

3. Undue influence

- (1) A person is not permitted to provide a television multiplex service or radio multiplex service if in the opinion of Ofcom:
 - (a) any relevant body is, by the giving of financial assistance or otherwise, exerting influence over the activities of that person, and
 - (b) that influence has led, is leading or is likely to lead to results which are adverse to the public interest.
- (2) In sub-paragraph (1) "relevant body"
 - (a) in relation to the provision of television multiplex services means a person falling within paragraph 1(1)(a) to (f) or (i) above or a body which is controlled
 - (i) by a person falling within paragraph 1(1)(a) to (e) above, or
 - (ii) by two or more such persons taken together; and
 - (b) in relation to the provision of radio multiplex services means a person falling within paragraph 1(1)(a) to (f) or (i) or a body which is controlled:
 - (i) by a person falling within paragraph 1(1)(a) to (e) above;
 - (ii) by two or more such persons taken together.

4. General provision of information to Ofcom

- (1) The Licensee shall furnish to Ofcom in such manner and at such times as Ofcom may reasonably require such documents, accounts, returns, estimates, reports, notices or other information as Ofcom may (require for the purpose of exercising the functions assigned to it under the Act (but without prejudice to the generality of the foregoing):
 - (a) a declaration as to its corporate structure in such form and at such times as Ofcom shall specify; and
 - (b) such information as Ofcom may reasonably require from time to time for the purposes of determining whether the Licensee is on any ground not permitted to provide a television or radio multiplex service by virtue of any of the provisions within paragraphs 1, 2 and 3 of this Schedule 2.

5. Changes

Where the Licensee is a body corporate, the Licensee shall notify Ofcom:

- (1) (a) of proposals affecting shareholdings in the Licensee or any body corporate which controls the Licensee, or the directors of the Licensee or the directors of any body corporate which controls the Licensee, and of any proposals to enter into any arrangements of the type referred to in paragraph 7 (2) below, by giving advance notice of such proposals where they are known to the Licensee as

soon as reasonably practicable where such proposals would constitute a change in the persons having control over the Licensee within the meaning of paragraph 8 below; and

- (b) of changes, transactions or events affecting shareholdings in the Licensee or any body corporate which controls the Licensee, or the directors of the Licensee or the directors of any body corporate which controls the Licensee (irrespective of whether proposals for them have fallen to be notified) within 28 days of the Licensee becoming aware of any such change, transaction or event and where such change, transaction or event would constitute a change in the persons having control over the Licensee within the meaning of paragraph 8 below.
- (2) (a) The Licensee shall notify Ofcom within 28 days if any person:
- (i) holding or being beneficially entitled to 50 per cent. of the equity share capital in the Licensee or in any body corporate which controls the Licensee; or
 - (ii) possessing 50 per cent. of the voting power in the Licensee or any body corporate which controls the Licensee, enters into any arrangement with any other participant in the Licensee or in any such body corporate which controls the Licensee as to the manner in which any voting power in the body possessed by either of them is to be exercised, or as to the omission by either of them to exercise such voting power.
- (b) For the purposes of paragraph 5 (2) (a):
- (i) **"arrangement"** includes any agreement or arrangement, whether or not it is, or is intended to be, legally enforceable;
 - (ii) a person shall be treated as holding, or being beneficially entitled to, any equity share capital which is held by a body corporate which he controls or to which such a body corporate is beneficially entitled, and as possessing any voting power possessed by such a body corporate; and
 - (iii) **"participant"**, in relation to a body corporate, means a person who holds or is beneficially entitled to shares in that body or who possesses voting power in that body.

6. Interoperability

The Licensee shall ensure that any labelling of transport stream components, including logical channel numbers, service identification and network identification, used in the provision of a television multiplex service or radio multiplex service does not conflict with the labelling used by other operators providing technically compatible services.

7. Interpretation

(1) In this Schedule 2:

"control"

- (a) in relation to a body corporate, shall be construed in accordance with subparagraph (3), and

- (b) in relation to any body other than a body corporate, means the power of a person to secure, by whatever means and whether directly or indirectly, that the affairs of the first-mentioned body are conducted in accordance with the wishes of that person;

“digital sound programme service” (“DTPS”) has the meaning given in section 60(1) of the Broadcasting Act 1996 (as amended);

“digital television additional service” (“DTAS”) has the meaning given in section has the meaning given in Section 24(1) of the Broadcasting Act 1996 (as amended);

“digital television programme service” (“DSPS”) has the meaning given in section in Section 1(4) of the Broadcasting Act 1996 (as amended);

"equity share capital" has the same meaning as in the Companies Act 1985;

"local authority"

- (a) in relation to England, means any of the following, that is to say, the council of a county, district or London borough, the Common Council of the City of London and the Council of the Isles of Scilly;
- (b) in relation to Wales, means a county council or county borough council;
- (c) in relation to Scotland, means a council constituted under section 2 of the Local Government etc (Scotland) Act 1994; and
- (d) in relation to Northern Ireland, means a district council;

“logical channel number” means the unique identification number for each DTPS, DTAS or DSPS carried on a television multiplex service or radio multiplex service, which assigns the service to a position on the electronic programme guide;

“network identification” means the unique label which identifies each television multiplex service or radio multiplex service;

"participant", in relation to a body corporate, means a person who holds or is beneficially entitled to shares in that body or who possesses voting power in that body;

“service identification” means the unique label which identifies each DTPS, DTAS or DSPS on a multiplex.

“transport stream components” means the individual packets of data that together make up the transport stream that carries all the services and service information within a television multiplex service;

- (2) For the purpose of determining the persons who are the associates of a body corporate for the purposes of this Schedule 2:
- (a) an individual shall be regarded as an associate of a body corporate if he is a director of that body corporate, and
- (b) a body corporate and another body corporate shall be regarded as associates of each other if one controls the other or if the same person controls both.
- (3) For the purpose of determining the persons who are an individual's associates for the purposes of this Schedule, the following persons shall be regarded as associates of each other, namely:

- (a) any individual and that individual's husband or wife or civil partner and any relative, or husband or wife or civil partner of a relative, of that individual or of that individual's husband or wife or civil partner;
- (b) any individual and any body corporate of which that individual is a director;
- (c) any person in his capacity as trustee of a settlement and the settlor or grantor and any person associated with the settlor or grantor;
- (d) persons carrying on business in partnership and the husband or wife or civil partner and relatives of any of them;
- (e) any two or more persons acting together to secure or exercise control of a body corporate or other association or to secure control of any enterprise or assets;

and in this sub-paragraph "relative" means a brother, sister, uncle, aunt, nephew, niece, lineal ancestor or descendant (the stepchild or illegitimate child of any person, or anyone adopted by a person, whether legally or otherwise, as his child, being regarded as a relative or taken into account to trace a relationship in the same way as that person's child); and references to a wife or husband shall include a former wife or husband and a reputed wife or husband and references to a civil partner shall include a former civil partner and a reputed civil partner.

- (4) For the purposes of this Schedule a person controls a body corporate if:
 - (a) he holds, or is beneficially entitled to, more than 50 per cent of the equity share capital in the body, or possesses more than 50 per cent of the voting power in it; or
 - (b) although he does not have such an interest in the body, it is reasonable, having regard to all the circumstances, to expect that he would (if he chose to) be able in most cases or in significant respects, by whatever means and whether directly or indirectly, to achieve the result that affairs of the body are conducted in accordance with his wishes; or
 - (c) he holds, or is beneficially entitled to, 50 per cent of the equity share capital in that body, or possesses 50 per cent of the voting power in it, and an arrangement exists between him and any other participant in the body as to the manner in which any voting power in the body possessed by either of them is to be exercised, or as to the omission by either of them to exercise such voting power.
- (5) For the purposes of sub-paragraph (4)(c):
 - (a) "arrangement" includes any agreement or arrangement, whether or not it is, or is intended to be, legally enforceable, and
 - (b) a person shall be treated:
 - (i) as holding, or being beneficially entitled to, any equity share capital which is held by a body corporate which he controls or to which such a body corporate is beneficially entitled, and
 - (ii) as possessing any voting power possessed by such a body corporate.
- (6) For the purposes of any provision of this Schedule which refers to a body controlled by two or more persons or bodies of any description taken

together, the persons or bodies in question shall not be regarded as controlling the body by virtue of paragraph (b) of sub-paragraph (4) unless they are acting together in concert.

- (7) In this Schedule any reference to a participant with more than a 5 per cent interest in a body corporate is a reference to a person who:
- (a) holds or is beneficially entitled to more than 5 per cent of the shares in that body, or
 - (b) possesses more than 5 per cent of the voting power in that body.
- (8) Sub-paragraph (7) shall have effect subject to the necessary modifications in relation to other references in this Schedule:
- (a) to an interest of more than a specified percentage in a body corporate, or
 - (b) to an interest of a specified percentage or more in a body corporate.

8.

- (1) Subject to sub-paragraph 9(2) any reference in paragraph 8 above to a person:
- (a) holding or being entitled to shares, or any amount of the shares or equity share capital, in a body corporate, or
 - (b) possessing voting power, or any amount of the voting power, in a body corporate,
- is a reference to his doing so, or being so entitled, whether alone or jointly with one or more other persons and whether directly or through one or more nominees.
- (2) For the purposes of this Schedule, a person's holding of shares, or possession of voting power, in a body corporate shall be disregarded if, or to the extent that:
- (a) he holds the shares concerned
 - (i) as a nominee,
 - (ii) as a custodian (whether under a trust or by a contract), or
 - (iii) under an arrangement pursuant to which he has issued, or is to issue, depositary receipts, in respect of the shares concerned, and
 - (b) he is not entitled to exercise or control the exercise of voting rights in respect of the shares concerned.
- (3) For the purposes of sub-paragraph (2)(b):
- (a) a person is not entitled to exercise or control the exercise of voting rights in respect of shares if he is bound (whether by contract or otherwise) not to exercise the voting rights, or not to exercise them otherwise than in accordance with the instructions of another, and
 - (b) voting rights which a person is entitled to exercise or of which he is entitled to control the exercise only in certain circumstances shall be taken into account only when those circumstances have arisen and for as long as they continue to obtain.

9.

For the purposes of this Schedule the following persons shall be treated as connected with a particular person:

- (a) a person who controls that person,
- (b) an associate of that person or of a person falling within paragraph (a),
and
- (c) a body which is controlled by that person or by an associate of that person.

Annex 2

Interoperability

Background: the existing DTT multiplexes

- A2.1 Interoperability can be defined as the degree to which a broadcaster's transmissions are compatible with those of others and with the equipment that viewers possess at home.
- A2.2 DTT in the UK uses a standard known as DVB-T. The specification for DVB-T was originally developed by a cross-European group of broadcasters and manufacturers. Their work was subsequently adopted and published as a standard by the European Telecommunications Standards Institute ETSI⁸⁵. Other international standards bodies exist such as the International Organisation for Standardisation⁸⁶ and the International Electrotechnical Commission⁸⁷.
- A2.3 Although use of a single standard should in principle allow interoperability, international or European Standards are often designed with many possible end uses in mind. When the existing DTT multiplexes were licensed, the Independent Television Commission (the broadcast regulator at the time) decided that it was necessary to permit only a subset of some of the standards to be used to reduce the risk of platform fragmentation and for coverage consistency. A further consideration was that it was at the time difficult and expensive to manufacture receivers that could cope with all potential combinations, and it was deemed important in the early years of DTT rollout that all receivers would be able to function technically with all multiplexes. The permissible modes of operation are detailed in the now Ofcom document 'Reference Parameters for Digital Terrestrial Television in the United Kingdom'.
- A2.4 For new operators, the Reference Parameters are a good starting point for licensees who intend their services to be compatible and to interoperate with the existing six multiplexes and consumers' equipment.

Voluntary cooperation

- A2.5 In addition to the cooperation imposed by the multiplex licence conditions, there is a significant amount of additional voluntary cooperation undertaken by the licensees and industry more generally.
- A2.6 At an early stage in the development of DTT it was recognised that many of the technical aspects of the broadcast chain had yet to be agreed as international standards. Also, the multiplex licence conditions could only set a framework for the transmission of DTT signals, and a significant amount of detailed work would need to be done to refine the broadcasters' technical arrangements. In addition, other important contributors to the nascent platform such as the manufacturing sector lay outside the regulator's locus. In response to this need, various working groups and bodies were established. Those most relevant to DTT interoperability now are the Digital Television Group (DTG) and DTT Multiplex Operators Ltd (DMOL)

⁸⁵ www.etsi.org

⁸⁶ www.iso.org

⁸⁷ www.iec.ch

Digital Television Group (DTG)

- A2.7 In the mid 1990s, even before any multiplex licences had been advertised, the DTG⁸⁸ was formed with the aim of “facilitating the introduction of DTT” in the UK. The DTG’s members were originally drawn principally from UK broadcasters, manufacturers and transmission companies, but membership has now grown to over 130 organisations worldwide. We are a member of the DTG and contribute to its work in some areas.
- A2.8 The DTG comprises a number of subgroups of specialists who maintain the publication Digital Terrestrial Television – Requirements for Interoperability (also known as the ‘D-Book’) which builds on our Reference Parameters in the relevant areas, but also covers a much broader scope including ranging from a single source video stream, through the broadcast chain, up to including recommendations for receiver usability. The D-Book has become the industry standard reference in the UK for organisations involved in all parts of the DTT chain that are seeking detailed guidance on interoperability.

DTT Multiplex Operators Ltd (DMOL)

- A2.9 DTT broadcasts are at present managed by the four organisations that operate the six terrestrial multiplexes – namely
- The BBC (Multiplexes 1 and B)
 - Digital 3&4 Limited (Multiplex 2)
 - SDN (Multiplex A); and
 - Arqiva (Multiplexes C and D)
- A2.10 These operators have established a company called DMOL with the principal aim of “facilitating the adoption, co-ordination and implementation of a common technical policy for DTT within the UK.”
- A2.11 DMOL also comprises a small number of subgroups focused on specific areas and attended by representatives from each of the multiplex operators. Individually, the multiplex operators work within the requirements set out in our Reference Parameters and the D-Book and through DMOL coordinating their operations on matters of a cross-platform nature.

Cross carriage of SI

- A2.12 DTT makes use of a stream of data that is normally invisible to viewers and is essential for digital receivers to operate. This SI is continuously broadcast in the multiplex along with the programme services.
- A2.13 SI can be thought of as providing an index for the whole of a multiplex. A receiver can use the SI to obtain details of the other multiplexes broadcast from each transmitter in a network, the services contained within the multiplexes, details of current and future programmes and other important information required by the receiver to be able to locate specific services within a multiplex bitstream. In the UK,

⁸⁸ www.dtg.org.uk

it is also used to provide the common open seven-day EPG used by the majority of receivers.

- A2.14 The six existing multiplexes share or cross-carry some of their SI as they are required by their licences to each provide some schedule information about the services contained within all other multiplexes broadcast from the same site. This improves receiver performance and EPG consistency and is achieved using a complex system of central collation of information, subsequent distribution and filtering at key transmitter sites.

Interoperability for new operators

Mandatory requirements

- A2.15 As mentioned above, each DTT multiplex carries SI alongside the programme services. Consistency in these data is very important as set-top boxes can otherwise stop functioning correctly. This means that unless there is a uniform approach from operators, the services of one operator could be affected by those of another. The existing multiplexes are required through the Reference Parameters to co-operate in certain areas to ensure that conflicts in the provision of SI do not occur.
- A2.16 We are including in the licences to be awarded a condition that requires new operators of television multiplexes to cooperate with the existing multiplex operators and the operators of other compatible services in two key areas – the allocation of LCNs and transport stream labelling.

Transport stream labelling

- A2.17 Transport stream is the name given to the data stream that is carried within a DTT multiplex. The transport stream contains all programme and other services split up into small packets of information. In order to be able to decode each service correctly, it is necessary to be able to identify which data packet belongs to each service. Certain transport stream components, including network and service identifiers, must be unique. If this does not happen, there is a risk that viewers' receivers will not operate reliably and will lose reception of some services.
- A2.18 Operators of any new DTT multiplexes will need to cooperate with other operators to ensure that they continue to allocate unique labels to key transport stream components. The six existing multiplexes cooperate through DMOL to ensure that each uses unique labels for their multiplexes.

LCNs

- A2.19 The LCN is the position on a receiver's channel list where a programme service appears (e.g. BBC1 on position 1, ITV 1 on position 3). DMOL administers the allocation of LCNs for the existing six DTT multiplexes in accordance with a published policy. In essence, LCNs for channels are grouped by channel genre for the convenience of viewers and are allocated sequentially. This means that news channels have numbers that are close together, as do channels for children etc.
- A2.20 Licensees wishing to launch new DTT services will need to agree an LCN with DMOL. The cost of a LCN is currently £10,000 per year.

Optional requirements

- A2.21 If operators intend their services to be compatible with the existing multiplexes and be received by viewers using existing receivers, it is strongly recommended that they ensure their technical arrangements comply with our Reference Parameters and the DTG's D-Book. The D-Book is available only to members of the DTG, so potential operators would either need to join the DTG for access to the D-Book or to engage the services of a third party transmission company that is able to provide a compliant system.
- A2.22 The DTG offers a class of membership that is open to new entrants giving access to the D-Book and the right to participate in the DTG's various working groups. The cost of new entrant membership of the DTG is £3,000 per year.
- A2.23 Operators successful in acquiring spectrum through these awards will not be obliged to adopt the technical standards (or the subsets of those) set out in our Television Technical Performance Code or Reference Parameters. Subject to compliance with the spectral mask contained in their licences, the operators are free to offer services using different standards. It should be noted that should they choose to use alternative standards, there is a risk that existing receivers will not be able to receive their services.
- A2.24 Similarly, if operators intend that details of their services to be carried in a consistent fashion on the DTT EPG, they will need to make arrangements with DMOL for the exchange of schedule information.
- A2.25 Some information is provided below on the arrangement that has been adopted by the existing multiplexes that potential bidders may find useful.

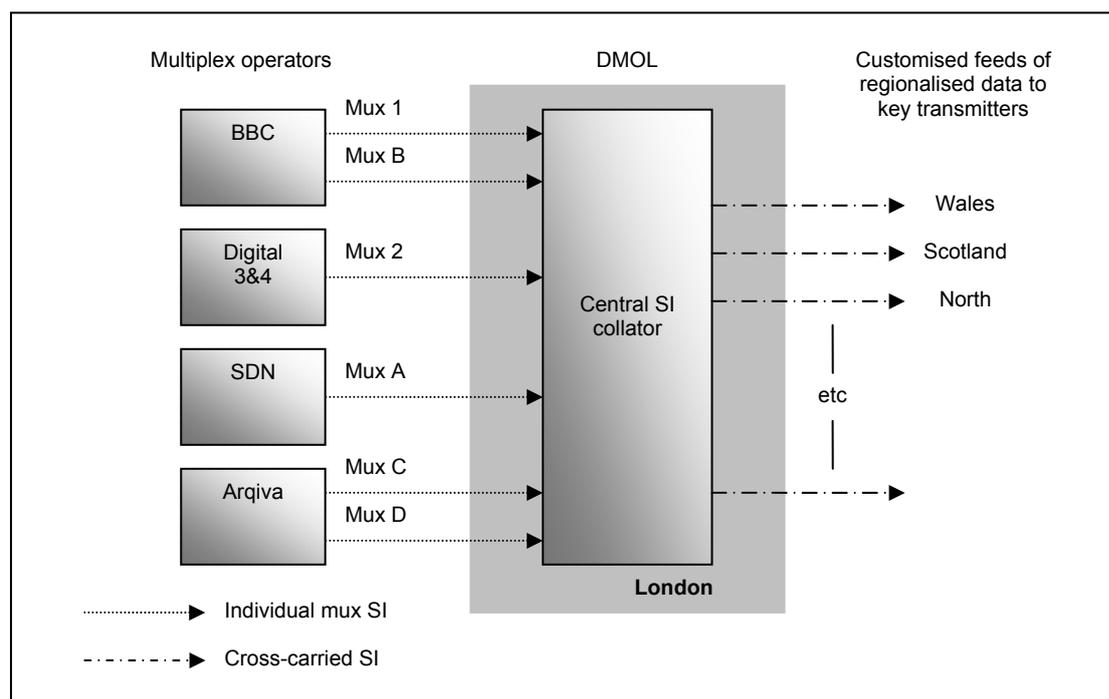
SI and EPG

- A2.26 The method adopted by the broadcasters for cross-carrying SI is that all multiplexes provide programme schedule data to a central SI collator located in West London. The centrally collated SI containing information from all six multiplexes is then distributed in bespoke form to main transmitters in each of the various programme regions as a single stream containing information for all of the UK's programme regions would be very large.
- A2.27 DMOL is responsible for the SI collator, although the day-to-day operation has been subcontracted. DMOL members have shared the capital costs of the equipment and each pays a proportion of the ongoing costs for maintenance. Licensees wishing to cross-carry service information and appear on the DTT EPG will need to make the necessary contractual arrangements with DMOL.
- A2.28 There are two parts to cross-carriage of SI:
- contribution of individual multiplex schedule data to the central collator; and
 - distribution of cross-carried SI to transmitter site(s).

Contribution

- A2.29 DMOL has adopted a policy of collating all SI data centrally to ensure data consistency and reliability. The arrangement is known as Central Service Information (collator) or 'CSI' and is shown in outline in Figure A2.1.

Figure A2.1 Outline contribution arrangement for cross-carriage of SI



A2.30 The current CSI service is provided for DMOL's members under a third party service contract using equipment owned by DMOL. The exact form of the arrangement by which Service Information for new operators' services will be carried through the CSI system, and the associated charge, will be for new operator to negotiate with DMOL.

A2.31 There are several options for how the relationship between new operators and the existing multiplex operators could operate. New operators can arrange to pay DMOL individually for carriage of Service Information on the CSI. If there are a number of local operators, efficiencies should be possible if these operators act through a single body such as a trade association that could co-ordinate their requirements. This could lead to savings to individual operators through cost-sharing (for example sharing the charge for Logical Channel Numbers). If a new operator is intending offering a service similar to the national multiplexes, another option would be to become a full member of DMOL. Depending on the arrangement chosen, the new entrant can expect to:

- fully fund any costs associated with the upgrade or modification of the CSI service delivery system necessary to satisfy the new entrant's DMOL CSI requirements
- pay a stakeholding charge that will relate to an appropriate proportion of the asset value on the books of DMOL
- an annual DMOL membership charge (if applicable)
- further costs may occur in the future if it is necessary to change the CSI service delivery system either through a technology refresh or a change in the contracted service provider.

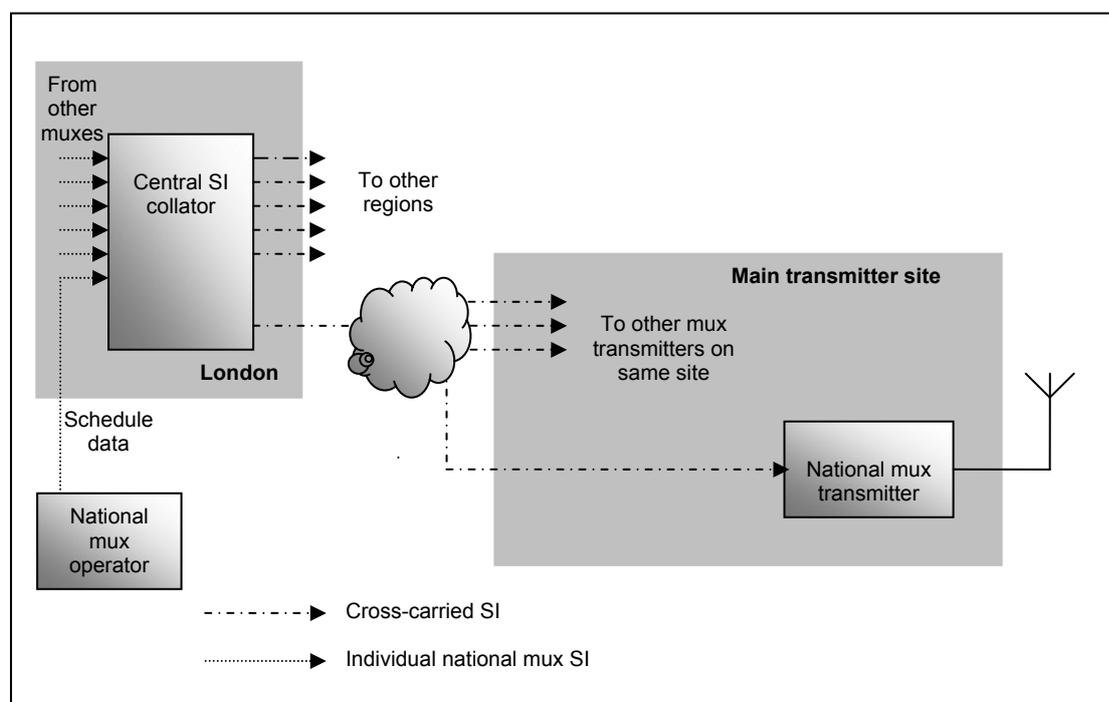
A2.32 In addition the new entrant will need to pay the costs for delivery of their multiplex channels' schedules to the CSI collation interface points in London, and if required, to any back-up systems. This means that new multiplexes would need to provide schedule information in a suitable form to the central collator. This could be achieved through a third party schedule provider as used by some of the existing multiplexes.

Distribution

A2.33 The new multiplex operator would also need to arrange a means of bringing the combined SI to its transmitter site. The existing multiplexes each employ dedicated circuits from London to the main transmitters in each region. Depending on the multiplex, these are carried by either terrestrial means or satellite.

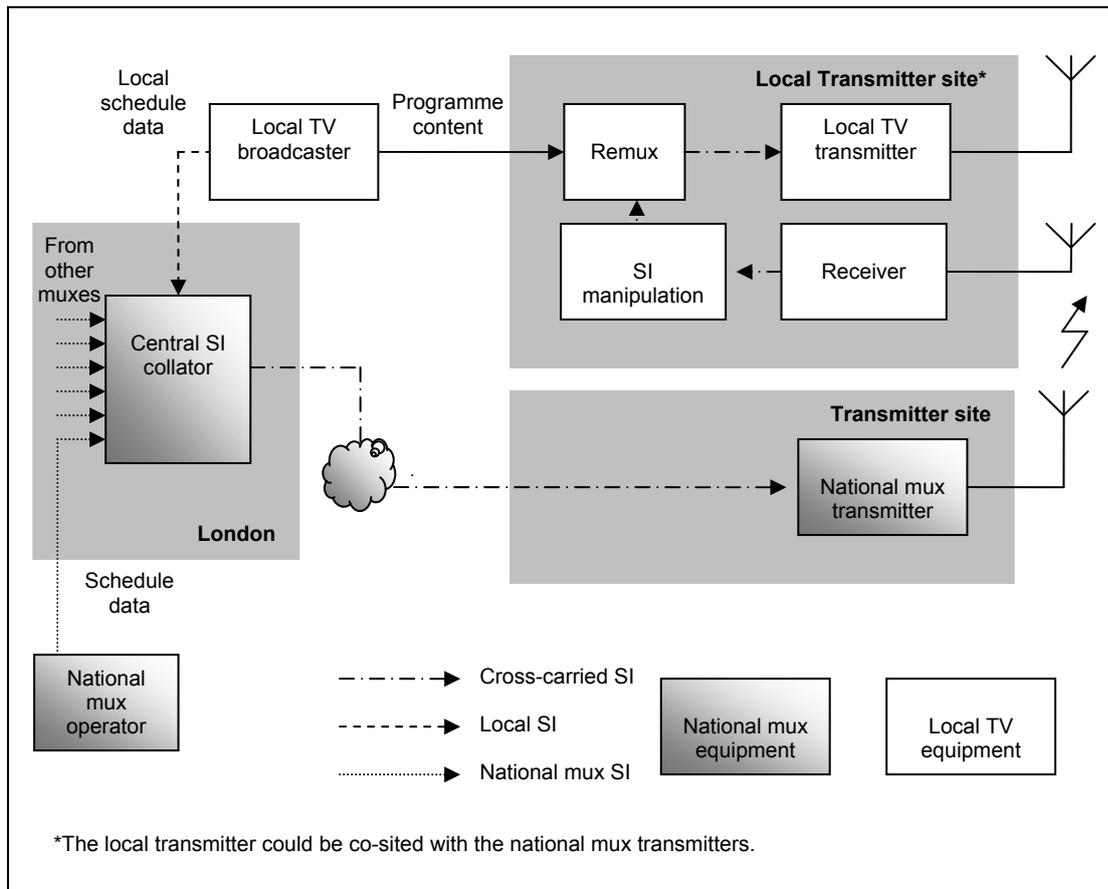
A2.34 A new multiplex could put in place a similar arrangement to the national multiplexes. This arrangement is shown in outline in Figure A2.2 below.

Figure A2.2 Outline distribution arrangement for cross-carriage of SI



A2.35 It is possible that the new multiplex could employ alternative arrangements to those of the national multiplexes. One example would be to use a receiver at the transmitter site that is able to pick up one of the national multiplexes and acquire cross-carried SI from this off-air signal. After manipulation into a suitable form, this cross-carried SI could be inserted into the new multiplex. Figure A2.3 shows how this arrangement might work.

Figure A2.3 Outline arrangement for off-air acquisition of SI



Annex 4

Glossary

Activity Rules

The rules set out at Part 6 of the Regulations.

Additional Member Warranty

The warranty set out at Schedule 2 of the Regulations.

a.g.l.

Above ground level.

Administered incentive pricing (AIP)

A fee charged to users of the spectrum to encourage them to make economically efficient use of their spectrum.

Alternative Method

A means of submitting Bids, other than by the Electronic Auction System, as described in paragraph 4.36.

A.M.S.L.

Above mean sea level

Analogue preferred service area (APSA)

A method of estimating by computer simulation the areas where viewers are likely to be making use of the analogue services from a particular transmitter.

Applicant

A body corporate making an application for the Licence.

Application Form

A form containing the application information specified at Schedule 1 of the Regulations.

Appropriate Bidders

Those Bidders which made a valid bid in the auction stage.

Associate

In relation to an applicant or a bidder, a person who has a material interest in that Applicant or Bidder.

Authorised Person

A person specified by an Applicant in its application as authorised to bind that Applicant for all purposes relating to the Award Process.

Auction

The procedure set out at Part 5 of the Regulations for the award of Licences.

Award Process

The procedures set out in the Regulations for the award and issue of the Licences.

Bid

Shall be construed with regulation 15(2) of the Regulations.

Bidder

An Applicant which has qualified to Bid in the Award Process and which has not withdrawn from the Award Process on or before the Last Day for Withdrawal.

Bidder Group

Means, in relation to an Applicant or Bidder—

- (a) that Applicant or Bidder;
- (b) each Associate of that Applicant or Bidder; and
- (c) each person in respect of whom the Applicant or Bidder has delivered to Ofcom a completed document in the form set out in Schedule 2 of the Regulations.

Business Day

A day (other than a Saturday or Sunday) on which banks are generally open in London for normal business.

C Act

The Communications Act 2003 (as amended).

CE mark

A mandatory European conformity mark to indicate conformity with essential health and safety requirements set out in European Directives.

CEPT

European Conference of Postal and Telecommunications Administrations, comprising the governments and national regulatory authorities of over 40 European administrations.

Conditions of Entitlement

Conditions of entitlement determined by Ofcom under section 45 of the Communications Act, applying to providers of ECNs and/or ECSs.

Confidential Information

Means, in relation to any Applicant or Bidder, any information which is not in the public domain and which, if it were made public or disclosed to another Applicant (or potential Applicant) or Bidder or a member of their respective Bidder Groups, would be likely to affect the decisions that such other Applicant (or potential Applicant) or Bidder may make in relation to the Award Process.

Co-ordination

The process under which users seek mutual agreement to the technical parameters of use in their respective spectrum in order to avoid harmful interference.

dB

Decibel – a means of expressing a ratio (e.g. power, voltage, loudness) using logarithms that makes it easier to deal with very large and very small numbers.

dBW

Means the power level in decibels (logarithmic scale) referenced against 1 watt (i.e. a value of 0 dBW is 1 W).

dB μ V/m

Decibel microvolts per metre.

DDR

Digital Dividend Review: our project to release the spectrum freed up by DSO for new uses.

DTT Multiplex Operators Limited (DMOL)

A company set up by the operators of the existing DTT multiplexes to run joint services, such as the Freeview EPG.

Digital preferred service area (DPSA)

A method of estimating by computer simulation the areas where a particular transmitter provides the best (in technical terms) digital service. For a particular area, The method divides the UK into 100m x 100m squares and decides which transmitter provides best reception of the three PSB multiplexes and the greatest number of the commercial multiplexes to each square.

Digital switchover (DSO)

Switching off the traditional analogue terrestrial television signal that households have received for many years and replacing it with a digital signal.

Digital TV Group (DTG)

An industry association for digital television in the UK. It is an independent platform, neutral and technology agnostic.

Digital terrestrial television (DTT)

The implementation of digital technology to provide a greater number of channels and/or better quality of picture and sound using aerial broadcasts to a conventional antenna (or aerial) instead of a satellite dish or cable connection.

DVB-T/T2

Digital video broadcast – terrestrial. DVB-T2 is an advanced version, currently undergoing standardisation.

ECC

Electronic Communications Committee: a committee that reports to CEPT.

Electronic Auction System

The system established by us for Bidders to participate in the award process.

ECN

Electronic communications network.

ECS

Electronic communication service.

Electronic programme guide (EPG)

A programme schedule, typically broadcast alongside digital television or radio services, to provide information on the content and scheduling of current and future programmes.

ERP

Effective radiated power: the power fed to the antenna multiplied by the maximum gain of the antenna with respect to a half-wave dipole.

ETN

East of true north.

EU

European Union.

Existing DTT multiplexes

The six television multiplex services that currently make up the DTT platform in the UK, commonly referred to as Freeview, comprising Multiplex 1 (operated by the BBC), Multiplex 2 (operated by Digital 3&4 Ltd, jointly controlled by the Channel 3 licensees and Channel 4), Multiplex A (operated by SDN Ltd, controlled by ITV plc), Multiplex B (operated by BBC Free to View Ltd), and Multiplexes C and D (operated by National Grid Wireless Ltd).

General Conditions of Entitlement

Conditions of entitlement determined by us under section 45 of the Communications Act, applying to ECNs and/or ECSs.

GE06

Geneva 2006

GHz

A unit of frequency equal to 1,000,000,000 (1 x10⁹) Hz or cycles per second.

High Definition (HD)

A technology that provides viewers with better quality high resolution television pictures.

Initial Deposit

Shall be construed in accordance with regulation 4(3)(b) of the Regulations..

Initial term

The period from the date of grant of the Licence to 30 October 2026.

IR

Interface Requirement.

International Telecommunication Union:(ITU)

An international organisation within the United Nations system where governments and the private sector coordinate, discuss and agree the logistics of global telecommunications networks and services.

Kilowatt (kW)

A unit of power equal to one thousand watts.

Last Day for Withdrawal

Has the meaning given in regulation 9(1) of the Regulations.

Licence

A wireless telegraphy licence to be granted pursuant to the Regulations.

Licence Fee

The fee payable for a Licence, in accordance with the Regulations.

Licence Term

With respect to a Licence, the period beginning on the date the Licence is issued, and ending on the twentieth anniversary of that date.

Licensee

A holder of a Licence.

Logical Channel Number

The unique identification number for each content service (TV channel or radio station) on a television multiplex service or

radio multiplex service, which assigns the service to a position on the electronic programme guide.

Lot

A frequency block having a bandwidth of 8 MHz.

Material Interest

Means, whether held directly or indirectly—

(a) any interest (construed in accordance with sections 820 to 825 of the Companies Act 2006^(a⁸⁹)) in—

(i) any share which carries, or any shares which together carry, more than twenty-five per cent of the votes entitled to be cast at a general meeting of the Applicant or Bidder; or

(ii) any share or shares in the case of which the consent of the holder of that share or those shares is required for the conduct of any business of the Applicant or Bidder; or

(b) the right to appoint or remove a majority of the Applicant's or Bidder's board of directors.

Megahertz (MHz)

A unit of frequency equal to 1,000,000 (1 x 10⁶) Hz or cycles per second.

MPEG-4

An advanced method for encoding and compressing video and audio, developed by the Moving Pictures Experts Group (a working group of some international standards organisations).

NTS

Number translation service.

Ofcom

The Office of Communications, which is the independent regulator and competition authority for the UK communications industries, with responsibilities across television, radio, telecommunications and wireless communications services.

Ofcom's bank account

Means the bank account nominated by Ofcom for the purposes of the Award Process, details of which are published on their internet website.

Ofcom website

The website maintained by Ofcom at www.ofcom.org.uk.

Out of band emissions

Radio frequency emissions generated by the Radio Equipment and radiated into the frequency(s) adjacent (in terms of frequency) to the Licensee's Permitted Frequency(s).

PMSE

Programme-making and special events: services ancillary to the broadcasting and entertainment industry.

Quadrature Amplitude Modulation (QAM)

A type of signal modulation where the amplitude and phase of a carrier signal switch between a number of valid states. For 64QAM the carrier signal can adopt 64 different states.

Quadrature Phase Shift Keying (QPSK)

A particular variety of QAM where the carrier signal adopts one of four states.

Qualification Stage

The stage of the Auction described in paragraphs 4.14 to 4.18.

Radio Equipment

Radio equipment as defined in the schedule to the wireless telegraphy Licence.

Radio Regulations

An international treaty produced by the ITU that sets out at a global level how spectrum should be used by countries. The Radio Regulations are developed and maintained by World Radiocommunications Conferences.

Regulations

The Wireless Telegraphy (Licence Award) (No.2) Regulations 2008 and the Wireless

(a⁸⁹) 2006 c.46.

Telegraphy (Licence Award) (No.3) Regulations 2008.

Round

A period of time specified by us during which Bidders may make bids in accordance with the procedures set out in Part 5 of the Regulations.

RRC-06

Regional Radiocommunications Conference 2006.

Radio Spectrum Committee (RSC)

The RSC assists the European Commission in the development and adoption of technical implementing measures aimed at ensuring harmonised conditions for the availability and efficient use of radio spectrum.

Restricted Television Service Licence (RTSL)

A licence for short term television coverage of a specific event at a specific location.

SI

Service information.

Spectrum Framework Review (SFR)

Ofcom consultation published in November 2004 and resulting statement published in June 2005 by Ofcom on how spectrum will be managed in the future.

Spectrum trading

Process through which spectrum licence holders are able to transfer some or all of their rights to a third party.

Television multiplex service

Has the meaning given to it in section 241(2) of the C Act. In summary, a television multiplex service consists in the packaging together of two or more services in digital form, where at least one service is a television channel, for broadcasting to the general public.

Trading Regulations

The statutory regulations made by Ofcom in respect of spectrum trading.

Transmission site

A defined location at which facilities such as an antenna support structure (mast) are provided that are used for the purposes of broadcasting television or radio services.

UHF

Ultra high frequency.

UK Planning model

A coverage prediction model developed for planning DVB-T services.

Valid Bid

Has the meaning given in regulation 22(1) of the Regulations.

Winning Bid

Shall be construed in accordance with regulation 31 of the Regulations.

Winning Bidder

Means the Bidder that submitted the Winning Bid.

Wireless Telegraphy

The means of sending information without the use of a wired system.

WRC

World Radiocommunications Conference: an ITU convened conference, held approximately every two or three years, which updates the International Radio Regulations.

WT Act

Wireless Telegraphy Act 2006