



# Fees for Spectrum Access 28 GHz Licences

Notice of Proposed Regulations

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1 October 2015

Closing Date for Responses: 2 November 2015

## About this document

This document sets out proposals to implement fees for 28 GHz Spectrum Access licences.

The 28 GHz licences were auctioned in November 2000 with a 15-year fixed term ending in December 2015. In response to requests from licensees, the majority of these auctioned licences have since been varied to make them indefinite, subject to the payment of fees from January 2016.

Today's consultation proposes to implement fees from January 2016 which are based on existing charges for fixed link deployments in similar frequency bands.

The deadline for comments on the proposed regulations is 2 November 2015.

# Contents

| Section      |  | Page        |
|--------------|--|-------------|
| 1            | Executive Summary  | 1           |
| 2            | Notice   | 2           |
| 3            | Background and purpose   | 4           |
| 4            | Approach to setting AIP fees for Spectrum Access 28 GHz licences   | 12          |
| 5            | Derivation of AIP fees for Spectrum Access 28 GHz licences   | 15          |
| 6            | General effect of the Proposed Regulations on the Wireless Telegraphy (Licence Charges) Regulations 2011 | 20          |
| <b>Annex</b> |  | <b>Page</b> |
| 1            | Responding to this consultation  | 21          |
| 2            | Ofcom's consultation principles  | 23          |
| 3            | Consultation response cover sheet  | 24          |
| 4            | Current algorithm for fixed links  | 26          |
| 5            | Regions of authorised use for Spectrum Access Licences   | 27          |
| 6            | County and nationwide fees for regions of authorised use for Spectrum Access 28 GHz licences             | 28          |
| 7            | Proposed Regulations   | 29          |

## Section 1

# Executive Summary

- 1.1 This document consults on draft regulations (the Proposed Regulations) to amend the Wireless Telegraphy (Licence Charges) Regulations 2011.<sup>1</sup> The Proposed Regulations will be implementing changes that we have previously signalled in our “*Statement on the Requests for Variation of 28 GHz Broadband Fixed Wireless Access Licences*” of July 2013.<sup>2</sup>
- 1.2 That statement concluded that we would, upon request, vary the Broadband Fixed Wireless Access (BFWA) licences that were awarded in November 2000 and due to expire at end 2015 so as to make them indefinite. It also concluded that we would apply Administered Incentive Pricing (AIP) fees for these varied licences as of 1 January 2016.<sup>3</sup> The BFWA licences that have since been varied have been renamed as Spectrum Access 28 GHz licences.
- 1.3 This Notice therefore consults on the implementation of AIP fees for these Spectrum Access 28 GHz licences. The Proposed Regulations would implement fees before January 2016 and are based on the fee rates currently charged for fixed links using similar frequencies, modified to reflect the preliminary work of the Fixed Link and Satellite Services Fee Review (called henceforth in this document Fixed Link Fee Review for brevity).<sup>4</sup>
- 1.4 Comments on the Proposed Regulations are invited by **5pm on 2 November 2015**. Subject to consideration of the responses we receive we intend to make the Proposed Regulations and bring them into force before January 2016. The Proposed Regulations are included in this document at Annex 7. Further copies may be obtained from [www.ofcom.org.uk](http://www.ofcom.org.uk) or from Ofcom at Riverside House, 2a Southwark Bridge Road, London SE1 9HA.

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<sup>1</sup> <http://www.legislation.gov.uk/uksi/2011/1128/contents/made>

<sup>2</sup> <http://stakeholders.ofcom.org.uk/consultations/variation-28ghz/statement/>

<sup>3</sup> Following the end of the initial licensing period.

<sup>4</sup> Whilst we have undertaken some preliminary work, we have not yet made specific proposals for revised fixed link fees.

## Section 2

# Notice

## Introduction

- 2.1 Ofcom is responsible for authorising civil use of the radio spectrum and achieves this by granting wireless telegraphy licences under the Wireless Telegraphy Act 2006 (the “WT Act”) and by making regulations exempting users of particular equipment from the requirement to hold such a licence. Under section 12 of the WT Act we may prescribe in regulations the sums payable in respect of wireless telegraphy licences. Section 12 may apply to licences which have been awarded by auction where the holder of a licence has consented to the inclusion of provisions in the licence enabling the regulations to apply.<sup>5</sup>
- 2.1 Where Ofcom seeks to exercise its power under section 12 of the WT Act to prescribe licence fees, section 13(2) of the Act permits us to recover sums greater than those we incur in performing our radio spectrum management functions<sup>6</sup>. This is on the basis of having regard to the matters set out in section 3 of the WT Act, such as, for example, the extent to which the spectrum is available for use, or further use, for wireless telegraphy; the demand for the use of the spectrum, both currently and in the future; and the desirability of promoting the efficient management and use of the spectrum available for wireless telegraphy. Setting fees above the level of cost recovery is termed Administered Incentive Pricing (or AIP) and is designed to reflect a range of different spectrum management objectives. In particular, AIP helps provide incentives for licensees to use their spectrum more efficiently, which is consistent with our duties under section 3 of the WT Act.
- 2.2 Before making any regulations under section 12 of the WT Act, Ofcom is required by section 122(4) of the Act to give notice of our proposal to do so. Under section 122(5), the notice must: a) state that Ofcom proposes to make the regulations in question; b) set out the general effect of those regulations; c) specify an address from which a copy of the proposed regulations may be obtained; and d) specify a time before which any representations with respect to the proposal must be made to Ofcom. That time must be at least one month beginning with the day after that on which the notice is given or published.
- 2.3 This document (“the Notice”) gives notice of our proposal to make regulations to amend the Wireless Telegraphy (Licence Charges) Regulations 2011 (“the Proposed Regulations”). It also sets out the general effect of the Proposed Regulations. A copy of the Proposed Regulations is set out at Annex 7 of this document.

<sup>5</sup> Section 12(6)(a) of the WT Act. Such consent has been given in this case, where licensees have requested variations to their licences to extend the term indefinitely, subject to the payment of licence fees after the expiry of the original term (31 December 2015). Further detail is set out in the next section of this document.

<sup>6</sup> This is on the basis of having regard to the matters set out in section 3 of the WT Act, such as, for example: the extent to which the spectrum is available for use, or further use, for wireless telegraphy; the demand for the use of the spectrum, both currently and in the future; and the desirability of promoting the efficient management and use of the spectrum available for wireless telegraphy.

- 2.4 The Proposed Regulations are only applicable to Spectrum Access 28 GHz licences (formerly named BFWA licences)<sup>7</sup> which have been varied at the request of the licence holder and which apply in the specified regions of authorised use under these licences.
- 2.5 We seek responses to this Notice, both in relation to the Proposed Regulations and/or to our implementation of the AIP fee.

## Impact Assessment

- 2.6 The analysis presented in this document represents an impact assessment, as defined in section 7 of the Communications Act 2003<sup>8</sup> (the Act). 2.21 Impact assessments provide a valuable way of assessing different options for regulation and showing why the preferred option was chosen. They form part of best practice policy-making. This consultation sets out the potential impacts for stakeholders and the reasons for the proposals we are making.
- 2.7 Ofcom is separately required by statute to assess the potential impact of all our functions, policies, projects and practices on equality. Equality Impact Assessments also assist us in making sure that we are meeting our principal duty of furthering the interests of citizens and consumers regardless of their background or identity. We do not consider the impact of the proposals in this consultation to be to the detriment of any group within society.

## Equality Impact Assessment

- 2.8 Ofcom is separately required by statute to assess the potential impact of all our functions, policies, projects and practices on equality. Equality Impact Assessments also assist us in making sure that we are meeting our principal duty of furthering the interests of citizens and consumers regardless of their background or identity. We do not consider the impact of the proposals in this consultation to be to the detriment of any group within society.

## Structure of this document

- 2.9 The remainder of this document is structured as follows:
- Section 3 – Background and purpose
  - Section 4 – Approach to AIP fees for Spectrum Access 28 GHz Licences
  - Section 5 – Derivation AIP fees for Spectrum Access 28 GHz Licences
  - Section 6 - General effect of the Proposed Regulations on the Wireless Telegraphy (Licence Charges) Regulations 2011

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<sup>7</sup> In the spectrum bands 28.0525—28.1645 GHz paired with 29.0605—29.1725 GHz; 28.1925—28.3045 GHz paired with 29.2005—29.3125 GHz; and 28.3325—28.4445 GHz paired with 29.3405—29.4525 GHz.

## Section 3

# Background and purpose

## The purpose of this document

- 3.1 This Notice sets out the methodology and policy behind Ofcom's implementation of AIP fees for the Spectrum Access 28 GHz licences (previously named Broadband Fixed Wireless Access or 'BFWA' licences) which were auctioned by the DTI Radiocommunications Agency in November 2000. The licences were due to expire on 31 December 2015. However, following a request for variation from Urban Wimax (August 2012) and Cable & Wireless (December 2012), Ofcom decided in July 2013<sup>8</sup> to grant an indefinite extension to all eligible BFWA licensees upon request, with the varied licences being subject to AIP fees as of 1 January 2016. BFWA licences and renamed Spectrum Access 28 GHz licences<sup>9</sup> (and shall be referred to as such hereafter in this Notice). The purpose of this Notice is to consult on the proposed fees for these Spectrum Access 28 GHz licences.
- 3.2 These proposed fees have been derived in the manner set out in section 5 on the basis of the information that we have today. As explained in the end of this section we are carrying out a Fixed Link Fee Review and it is possible that the outcome of that Review may provide evidence that suggests we should revise the fees set for these Spectrum Access 28 GHz licences (which will then have been in force for January 2016 under the proposals in this Notice). In the event that we did then revise the fees set out in the draft regulations in this Notice, these fees would be, in effect, "interim" fees.

## Background and history of the 28 GHz band

### Broadband Fixed Wireless Access (BFWA) Licences awarded in 2000

- 3.3 In November 2000, the DTI Radiocommunications Agency auctioned 42 BFWA licences which were made available in three packages of 2 x 112 MHz paired spectrum in the 28 GHz band (see Figures 1 and 2). Spectrum was offered in 14 geographic regions of the UK: 11 regions in England, plus Scotland, Wales and Northern Ireland (see Figures 3 and 4 and Annex 5). Of the 42 BFWA licences available, 16 were awarded at this auction.<sup>10</sup>
- 3.4 Since the award, one licence has been surrendered while many others have changed ownership through trading<sup>11</sup> and so are no longer held by the original bidders from the 2000 auction. At present, 15 licences are held by the following 5 companies:
- Vodafone Limited (4 licences, bought from Cable & Wireless which bought from Thus PLC (formerly Your Communications, formerly Norweb), the first holder)
  - Chorus Communications Limited (1 licence)

<sup>8</sup> <http://stakeholders.ofcom.org.uk/binaries/consultations/variation-28ghz/statement/statement.pdf>

<sup>9</sup> See paragraphs 3.10 to 3.12 for more detail

<sup>10</sup> Licences were awarded in 7 out of the 14 available regions in November 2000. These were labelled as A,B,C, I,J,L and N. See Annex 5 for more detail.

<sup>11</sup> The 28 GHz licences can be traded in a number of ways. The 28 GHz bands are listed in Part 11 of the Trading Regulations. <http://www.legislation.gov.uk/uksi/2012/2187/made/data.pdf>

- Telefonica UK Limited (6 licences, bought from Cambridge Broadband, which bought from Fastnet Spectrum Holdings, which bought from Energis, the first holder)
- Urban Wimax Limited (1 licence, bought from Broadnet, the first holder)
- UK Broadband Limited (3 licences, bought from Faultbasic, the first holder)

## **Spectrum Access Licences awarded in 2008**

- 3.5 As part of a wider awards process (the “10-40 GHz award”), the unassigned spectrum in the 28 GHz band was auctioned in February 2008. The award included three lots, one in each of the three 2 x 112 MHz paired spectrum blocks, comprising the regional packages unsold in November 2000 (plus one that had been subsequently surrendered by its licensee). Two national 2 x 112 MHz packages were also auctioned. The licences awarded in February 2008 were technology neutral and were aligned with IR 2048 (see paragraph 3.9 below). To reflect these technology neutral terms, the licences awarded in 2008 were designated Spectrum Access licences.
- 3.6 The geographic areas in each of the three 2 x 112 MHz spectrum packages were consolidated into three ‘sub-national’ licences (Spectrum Access 1, 2 & 3 respectively), each with a 28 MHz guard channel. These sub-national licences are currently held by Vodafone Limited (Spectrum Access 1) and UK Broadband Limited (Spectrum Access 2 & 3). The national packages were without guard channels, abutting each other and adjacent to the original award allocations (the lower Spectrum Access 1 package). Both national packages were awarded to Arqiva and were amalgamated into a single 2 x 224 MHz block national Spectrum Access licence (see Figures 1, 2 and 3 later in this section). These licences are indefinite, with an initial period of 15 years during which no fees are payable, with a provision to charge fees after this initial period.

## **Variation to the BFWA licences awarded in 2000**

- 3.7 Since their award in November 2000, there have been three different variations made to the BFWA licences:

### 1) Administrative conditions

- 3.8 In 2002, the DTI Radiocommunications Agency consulted on changes to amend some restrictive administrative clauses of the BFWA licences and a variation was applied to all licences in February 2003.<sup>12</sup> This was prior to the creation of Ofcom.

### 2) Technical conditions

- 3.9 The original technical conditions of the BFWA licences issued in 2000 reflected those of IR 2043,<sup>13</sup> which details compliance with specific technical parameters. In contrast, the technical conditions of the 2008 Spectrum Access licences are aligned with IR

<sup>12</sup> <http://www.ofcom.org.uk/static/archive/ra/topics/bfwa/doc28ghz/consultation-result-announcement.doc>

<sup>13</sup> [http://stakeholders.ofcom.org.uk/binaries/spectrum/spectrum-policy-area/spectrum-management/research-guidelines-tech-info/interface-requirements/ir2043\\_jun05.pdf](http://stakeholders.ofcom.org.uk/binaries/spectrum/spectrum-policy-area/spectrum-management/research-guidelines-tech-info/interface-requirements/ir2043_jun05.pdf)



2048,<sup>14</sup> which uses a block edge mask on a technology-neutral basis. This provides the licensee more in-band flexibility and consistency of technical conditions, should they hold adjacent geographic areas or spectrum.

- 3.10 In 2009 the technical conditions of the licences now held by Urban Wimax and UK Broadband were varied by Ofcom (at the request of the licensees at the time) to reflect those of the 2008 Spectrum Access licences. The licences were also renamed Spectrum Access 28 GHz. To distinguish them from the Spectrum Access licences awarded in February 2008, the administrative terms of the licences are such to reflect the different award process, licence conditions, maturity dates and regions of authorised use.

### 3) Licence variation

- 3.11 The licences awarded in November 2000 were originally awarded for an initial period of 15 years, expiring as of 31 December 2015. However, we received requests from Urban Wimax (August 2012) and Cable & Wireless (December 2012) to extend the duration of their licences indefinitely beyond this expiration date.

- 3.12 Having consulted on these variation requests in December 2012,<sup>15</sup> the two licences were varied in July 2013.<sup>16</sup> We decided to:

- Extend the duration of the licence indefinitely beyond the current expiry date of 31 December 2015;
- Apply, where applicable, the technical terms of Interface Requirement 2048 (IR 2048) in order to align with other 28 GHz licences, and;
- Apply, from January 2016, administered incentive pricing (AIP) per geographic region at a rate yet to be determined, but which would be decided as part of (or in parallel with) the fees review for fixed link bands.

- 3.13 This variation was offered, on request, to all other BFWA licence holders. Since then all but one of the BFWA licences have been varied.<sup>17</sup> Those which have been liberalised have been renamed Spectrum Access 28 GHz licences.<sup>18</sup>

- 3.14 As previously indicated, the setting of AIP fees applies only to these Spectrum Access 28 GHz licences (the varied BFWA licences) in the 7 regions that licences were awarded in the November 2000 auction.<sup>19</sup>

<sup>14</sup> <http://stakeholders.ofcom.org.uk/binaries/spectrum/spectrum-policy-area/spectrum-management/research-guidelines-tech-info/interface-requirements/ir2048.pdf>

<sup>15</sup> [http://stakeholders.ofcom.org.uk/binaries/consultations/variation-28ghz/summary/28\\_GHz\\_Consultation.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/variation-28ghz/summary/28_GHz_Consultation.pdf)

<sup>16</sup> <http://stakeholders.ofcom.org.uk/binaries/consultations/variation-28ghz/statement/statement.pdf>

<sup>17</sup> Chorus Communications, Region N – Northern Ireland, package 2. Should no licence variation request be received, the licence shall expire on 31 December 2015.

<sup>18</sup> As per the approach taken towards the 2009 technical variation of the licences held by Urban Wimax and UK Broadband, the administrative terms of the varied BWFA licences, now termed Spectrum Access 28 GHz, maintain the distinction between them and the Spectrum Access licences that were awarded in February 2008.

<sup>19</sup> See Annex 5 for a definition of the regions covered by 28 GHz Spectrum Access licences

## 28 GHz spectrum assignments

- 3.15 The frequency and geographic assignments of the spectrum packages awarded in November 2000 and February 2008 are detailed below: Figure 1 shows the spectrum packages; Figures 2 and 3 describe the spectrum pairings and show the current licensees in their geographic regions; Figure 4 shows the geographic regions covered by each licence.

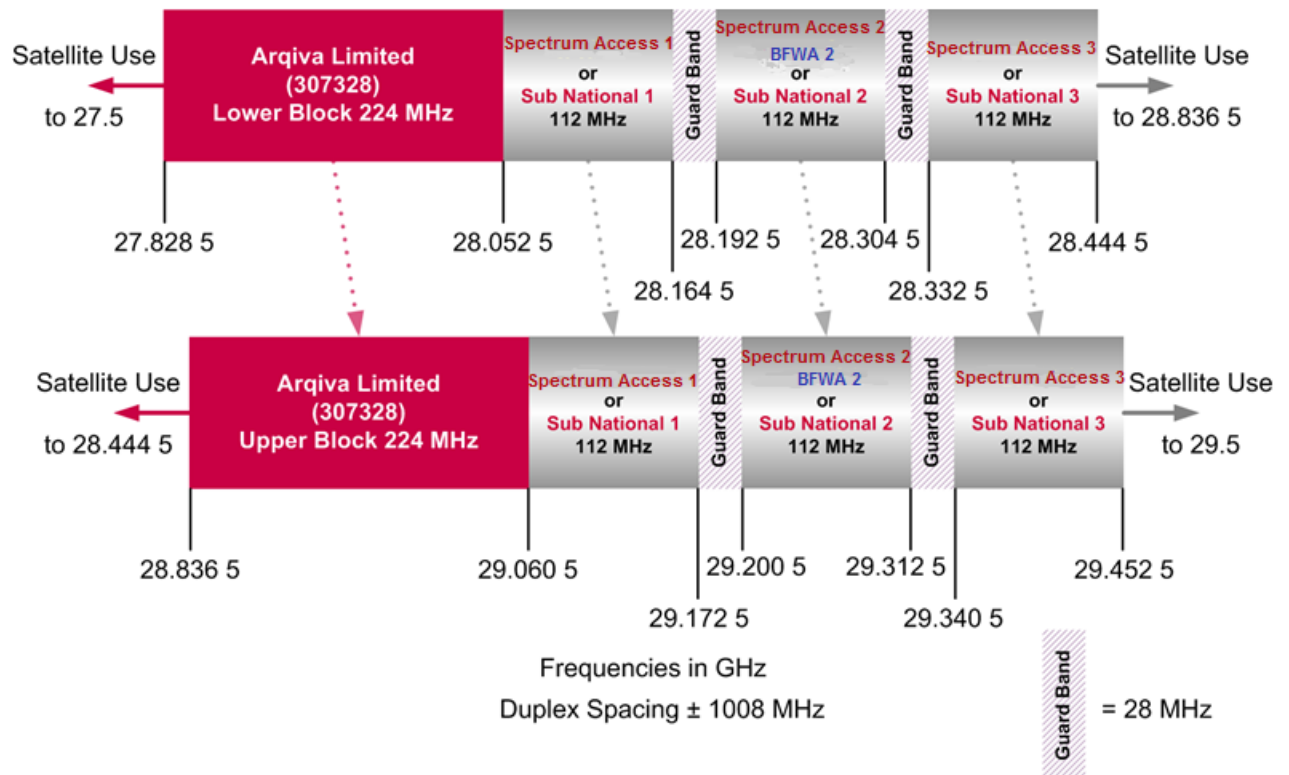
### Figure 1: Spectrum packages

- 3.16 Three 2 x 112 MHz paired spectrum packages, separated by a guard channel of 28 MHz, have been auctioned in the 28 GHz band. Three licence lots (BFWA), one in each 2 x 112 MHz paired spectrum block, were made available for auction in November 2000 across 14 geographic regions.
- 3.17 Correspondingly, three sub-national lots (Spectrum Access), one in each of the three 2 x 112 MHz paired spectrum blocks, comprising the unsold regions from the November 2000 auction were auctioned in February 2008. The two further spectrum packages were auctioned with the sub-national lots in February 2008 and were also of 2 x 112 MHz but without guard channels, abutting each other and the lower Spectrum Access 1 package. These were both purchased by Arqiva Limited and amalgamated into a single 2 x 224 MHz licence.

|  |         |         |                    |         |         |               |
|--|---------|---------|--------------------|---------|---------|---------------|
|  |         |         |                    |         |         |               |
| <b>Spectrum Access National (Arqiva)</b>     | 27.8285 | 28.0525 | <i>paired with</i> | 28.8365 | 29.0605 | (2 x 224 MHz) |
| <b>Spectrum Access 1</b>                     | 28.0525 | 28.1645 | <i>paired with</i> | 29.0605 | 29.1725 | (2 x 112 MHz) |
| Guard-band                                   |         |         |                    |         |         | (2 x 28 MHz)  |
| <b>Spectrum Access 2</b><br>or <b>BFWA 2</b> | 28.1925 | 28.3045 | <i>paired with</i> | 29.2005 | 29.3125 | (2 x 112 MHz) |
| Guard-band                                   |         |         |                    |         |         | (2 x 28 MHz)  |
| <b>Spectrum Access 3</b>                     | 28.3325 | 28.4445 | <i>paired with</i> | 29.3405 | 29.4525 | (2 x 112 MHz) |

**Figure 2: Frequency pairings in the 28 GHz spectrum band**

The blue text in the figure below represents pairings for the BFWA licences awarded in November 2000; the red text represents the pairings sold in 2008.



### Figure 3: Current licensees, geographical and spectrum adjacencies

Shaded areas in the figure below represent the BFWA licences awarded in 2000; Plain areas represent the Spectrum Access licences awarded in February 2008. Shaded areas with red text represent the BFWA licences which have been varied and aligned with IR 2048 (as per the Spectrum Access licences awarded in February 2008) according to our July 2013 decision on licence variation. Shaded areas with blue text represent the BFWA licences which have not been varied as of yet, and thus the original licence conditions still apply.

| Regions | Spectrum Access National<br>(2 x 224 MHz) | Spectrum Access 1<br>/ Sub-National 1<br>(2 x 112MHz) | BWA 2<br>Spectrum Access 2<br>/ Sub-National 2<br>(2 x 112MHz) | Spectrum Access 3<br>/ Sub-National 3<br>(2 x 112MHz) |
|---------|---|---|--|---|
| A       | Argiva                                    | Telefónica UK   | Urban Wimax  | UK Broadband  |
| B       |   | Vodafone  | Telefónica UK  | UK Broadband  |
| C       |   | Telefónica UK   | Vodafone   | UK Broadband  |
| D       |   | Vodafone  | UK Broadband   | UK Broadband  |
| E       |   |   |  |   |
| F       |   | Vodafone<br>(Sub National 1 region)                   | UK Broadband<br>(Sub National 2 region)                        | UK Broadband  |
| G       |   |   |  |   |
| H       |   | Telefónica UK   | Vodafone   | UK Broadband  |
| I       |   | Vodafone<br>(Sub National 1 region)                   | Vodafone   |   |
| J       |   |   | UK Broadband   |   |
| K       |   | Telefónica UK<br>(Sub National 1 region)              | UK Broadband   |   |
| L       |   |   | Chorus Comms   |   |
| M       |   | Telefónica UK   | Chorus Comms   | (Sub National 3 region)                               |
| N       |   |   |  |   |

Spectrum Access complying with IR 2048 – Licences first granted in December 2000

Spectrum Access complying with IR 2048 – Licences first granted in February 2008

BFWA complying with IR 2043 – Licence first granted in December 2000

#### Figure 4: Regions covered by BFWA and Spectrum Access 28 GHz licences

These regions were defined in the Schedule to the Wireless Telegraphy (Broadband Fixed Wireless Access Licences) Regulations 2000 by reference to descriptions of certain geographic areas labelled 'A' to 'N'. Licences were awarded in regions A, B, C, I, J, L and N in November 2000. A full list of these regions is set out in Annex 5 to this Notice.



### Status of the Fixed Link Fee Review

- 3.18 We have initiated a review for fees applicable to fixed links and satellite services across a wide range of frequency bands. We commissioned an independent report from Plum Consulting<sup>20</sup> and published this alongside our Call for Inputs on 21 May 2015.<sup>21</sup> In this CfI we considered some of the suggestions made by Plum for revisions to these fees. The Closing date for the consultation was 30 July 2015 and

<sup>20</sup> [http://stakeholders.ofcom.org.uk/binaries/consultations/review-spectrum-fees-fixed-links-satellite/annexes/plum\\_report.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/review-spectrum-fees-fixed-links-satellite/annexes/plum_report.pdf)

<sup>21</sup> [http://stakeholders.ofcom.org.uk/binaries/consultations/review-spectrum-fees-fixed-links-satellite/summary/fixed\\_services\\_fee.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/review-spectrum-fees-fixed-links-satellite/summary/fixed_services_fee.pdf)

the non-confidential responses to this are available here:

<http://stakeholders.ofcom.org.uk/consultations/review-spectrum-fees-fixed-links-satellite/?showResponses=true>.

- 3.19 We are currently reviewing stakeholders' responses and developing specific fees proposals. We plan to consult on these proposals sometime in 2016.
- 3.20 In this document when we refer to the preliminary work of this Fee Review we mean our current view given the combination of the work undertaken by Plum, stakeholder responses and our early thinking on the direction of travel of these fees.

## Section 4

# Approach to setting AIP fees for Spectrum Access 28 GHz licences

## Context

- 4.1 In our previous consultation on the variation to the BFWA licences in which we discussed our approach to setting spectrum fees, we considered the values bid in the 2000 and the 2008 awards. However, we determined that it would be inappropriate to use either historic value for use as a reference value for the potential fee for a Spectrum Access 28 GHz licence (varied BFWA licence).<sup>22</sup>
- 4.2 We instead considered the use of a reference value based upon the current fee for fixed links in broadly comparable bands. Given the expectation that the Fixed Link Fee Review would be covering a number of spectrum bands broadly comparable with 28 GHz, and given that we expected the review to be complete before 2016 we decided that it would be pragmatic, and would promote consistency in charging across different bands, to consider the fees for Spectrum Access 28 GHz licences as part of (or in parallel with) the Fixed Link Fee Review.<sup>23</sup>
- 4.3 In the event, we have had to reschedule the Fixed Link Fee Review in light of competing priorities, meaning that the required input from this review will not be ready in time to inform the setting of fees for January 2016. Accordingly, we have had to adopt a different approach to setting the level of fees for the Spectrum Access 28 GHz licences. This section explains the broad approach we have used to develop the proposed fees with section 5 explaining the method we have used to put this broad approach into practice.

## Ofcom's policy objectives

- 4.4 Ofcom's policy objective is to incentivise the efficient use of spectrum once the Spectrum Access 28 GHz licences come to the end of their initial award period. The setting of AIP fees for these licences is intended to provide this incentive and would be consistent with the approach we have taken towards other auctioned WT Act licences.<sup>24</sup> Our main objective is to set a fee level that provides appropriate

<sup>22</sup> [http://stakeholders.ofcom.org.uk/binaries/consultations/variation-28ghz/summary/28\\_GHz\\_Consultation.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/variation-28ghz/summary/28_GHz_Consultation.pdf)

<sup>23</sup> <http://stakeholders.ofcom.org.uk/binaries/consultations/variation-28ghz/statement/statement.pdf>

<sup>24</sup> Licences that Ofcom has awarded by auction have all been on the terms of having paid fees in the auction for an initial period of tenure, thereafter for an indefinite duration until surrendered by the licensee or revoked by Ofcom subject to 5-years' notice of revocation (for spectrum management reasons) and subject to AIP fees for the use of spectrum. For example, in February 2011 we consulted upon varying the terms of the 3G licences (<http://stakeholders.ofcom.org.uk/binaries/consultations/2100-MHz-Third-Generation-Mobile/summary/main.pdf>) before publishing a decision to do so in June 2011 (<http://stakeholders.ofcom.org.uk/binaries/consultations/2100-MHz-Third-Generation-Mobile/statement/statement.pdf>). According to our decision, AIP fees are to be applied to these licences from January 2022, after their duration was varied indefinitely beyond their initial end date of December 2021. For additional instances where AIP has been set for auctioned licences, see page 10 of our 2012 consultation on the variation of the 28 GHz BFWA licences ([http://stakeholders.ofcom.org.uk/binaries/consultations/variation-28ghz/summary/28\\_GHz\\_Consultation.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/variation-28ghz/summary/28_GHz_Consultation.pdf))



incentives for efficient use of spectrum by the licence holders. In this case, we note that there are a number of different frequency bands that could be close substitutes for the 28 GHz band covered by these licences. Accordingly, we have a specific concern to avoid perverse incentives to substitute the use of these bands for other bands used for fixed link deployment (or vice versa).

- 4.5 The approach to setting fees for what could prove to be an interim period also needs to be proportionate, noting that we will have the opportunity to revise the fees, if necessary, in light of the outcome of the Fixed Link Fee Review (see paragraphs 5.18 - 5.19).

## Proposed approach to setting fees

- 4.6 We have considered the following options for setting AIP fees for the Spectrum Access 28 GHz licences:
1. Set fees based on a stand-alone assessment of the opportunity cost of the 28 GHz spectrum, ahead of, and independently of, the work being carried out on the Fixed Link Fee Review;
  2. Set fees which are comparable to the current rate of fees for fixed links in other substitutable bands in nearby frequency bands;
  3. Set fees which are comparable to the current rate of fees for fixed links (as above), but modified to reflect the preliminary work of the Fixed Link Fee Review.
- 4.7 We are of the view that Option 3 is the most proportionate and appropriate approach. We believe this option provides the right balance of:
- Providing appropriate incentives for the efficient use of the spectrum;
  - Reducing the risk of creating perverse incentives; and
  - Reflecting the level of regulatory effort required to develop a fee which we will have the opportunity to revise, if necessary, in light of the outcome of the Fixed Link Fee Review.
- 4.8 Option 1 would require us to duplicate effort already being expended in the Fixed Link Fee Review, which is looking at revising fixed link fees for bands from 1.4 GHz to 70/80 GHz. We believe that the effort required to make this assessment would not be proportionate to the benefits. This approach may also risk us pre-empting the outcome of the Fixed Link Fee Review. Moreover, there will be an opportunity to adjust the fees for these Spectrum Access 28 GHz licences if needed in light of the outcome of the Fixed Link Fee Review (see paragraphs 5.18 - 5.19). We do not, therefore, intend to carry out a stand-alone assessment of the opportunity cost of the 28 GHz spectrum solely for these purposes.
- 4.9 Option 2 has a number of advantages over Options 1 in that it:
- promotes comparability with the fees that are currently being charged for fixed links and so may help to reduce perverse incentives to substitute between different fixed link bands;



- is based on fee levels that we have previously consulted widely on,<sup>25</sup> and
  - requires a proportionate amount of regulatory effort.
- 4.10 However, Option 2 doesn't take into account the impact that our recent Call for Inputs (CfI) in relation to fixed links<sup>26</sup> might have on licensee behaviour. In particular, our CfI referenced a report we had commissioned from Plum Consulting<sup>27</sup> which indicates that, whilst they expect fixed link bands below 20 GHz to continue to be in excess demand and the opportunity cost is likely higher than current fee levels reflect, those bands above 30 GHz they expect are likely to have lower demand and in some cases may warrant charging an AIP floor set to reflect costs.<sup>28</sup> Although we have not yet reached a view on the findings of the Plum Report and stakeholder responses to our CfI there is a risk that a failure to take some account of this work could increase the chances of setting fees that need to be revised once the Fixed Link Fee Review is complete – and of this leading to less efficient incentives in the meantime (for example, if some stakeholders believed that the future fees for similar fixed link spectrum are likely to be lower than those charged today).
- 4.11 Option 3 is therefore the same as option 2, but with the fees are modified to reflect the preliminary work of the Fixed Link Fee Review. Such modification is designed to reflect a reasonable assessment of the current opportunity cost of the spectrum given the preliminary work we have undertaken in the Fixed Link Fee Review. This is also designed to reduce the risks referred to in the above paragraph. The nature of the modification is explained in section 5. This option has all the benefits of Option 2 in paragraph 4.9, but it reduces the disadvantage referred to in paragraph 4.10
- 4.12 We therefore intend to proceed with Option 3. In the following section we address how we plan to implement this approach in practice.

<sup>25</sup> [http://stakeholders.ofcom.org.uk/binaries/consultations/spec\\_pricing/statement/statement.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/spec_pricing/statement/statement.pdf)

<sup>26</sup> [http://stakeholders.ofcom.org.uk/binaries/consultations/review-spectrum-fees-fixed-links-satellite/summary/fixed\\_services\\_fee.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/review-spectrum-fees-fixed-links-satellite/summary/fixed_services_fee.pdf)

<sup>27</sup> [http://www.plumconsulting.co.uk/pdfs/Plum\\_Apr\\_2015\\_Fixed\\_links\\_PES\\_fees\\_review.pdf](http://www.plumconsulting.co.uk/pdfs/Plum_Apr_2015_Fixed_links_PES_fees_review.pdf)

<sup>28</sup> We explain the meaning of an AIP floor in our Statement on the Strategic Review of Spectrum Pricing. This document also sets out our pricing principles and methodology.  
<http://stakeholders.ofcom.org.uk/binaries/consultations/srsp/statement/srsp-statement.pdf>

## Section 5

# Derivation of AIP fees for Spectrum Access 28 GHz licences

- 5.1 This section sets out Ofcom's methodology for calculating the proposed AIP fees for the Spectrum Access 28 GHz licences. It explains how we:
- derive a fee rate for these 28 GHz licences that is equivalent to current fee rates for Ofcom assigned fixed links in other, comparable frequency bands;
  - adjust the resulting fee rates to take account of the preliminary work of the Fixed Link Fee Review.
- 5.2 We then discuss our approach to future review of these fee rates, noting that we expect to complete the Fixed Link Fee Review later in 2016 with the outcome of that Review potentially being relevant to the fee rates for the Spectrum Access 28 GHz licences.

## Current fee rate equivalent

- 5.3 Ofcom licences fixed links in a number of bands which might be considered to be in a broadly similar frequency range, including 18GHz, 23 GHz, 26 GHz and 38GHz<sup>29</sup>. We charge fees for point-to-point links that we licence in these bands on the basis of rates which are set out in Schedule 2 of the Wireless Telegraphy (Licence Charges) Regulations 2011.<sup>30</sup> The proposed fee rates for the Spectrum Access 28 GHz spectrum licences set out in this Notice have been derived using the current fee rate for fixed links in the adjacent 26 GHz band. We have chosen the 26 GHz band as a proxy to inform our estimate of the opportunity cost of the 28 GHz band as it is the fixed link band which is closest to 28 GHz and is considered substitutable for 28 GHz.

## Approach and assumptions

- 5.4 We have undertaken the following steps to derive a fee rate for the Spectrum Access 28 GHz Licence that is equivalent to the current fee rates for licences assigned in the 26 GHz band:
- Step 1: Calculate an equivalent UK nationwide fee for a 2 x 112 MHz licence block by:
    - Understanding what a typical link in the 26 GHz band looks like in terms of those characteristics that drive the fee<sup>31</sup> and establishing the current fee for this typical link; we take the typical link to be one that has a bandwidth of 2 x 28MHz.

<sup>29</sup> A full list of bands available for use by fixed links is contained in OFW48 at <http://licensing.ofcom.org.uk/binaries/spectrum/fixed-terrestrial-links/guidance-for-licensees/OfW48.pdf>

<sup>30</sup> <http://www.legislation.gov.uk/uksi/2011/1128/made/data.pdf>

<sup>31</sup> Annex 4 provides the fixed link fee algorithm

- Multiplying this fee by the number of times a given channel in the 26 GHz band is re-used in different locations across the UK (in order to calculate the equivalent fee applicable to the use of the bandwidth by fixed links). We have taken a value of 400 to reflect potential future demand. This is more conservative than Plum's advice which was that a re-use value of 600 would be appropriate for bands in the range 23 GHz – 28 GHz. (We note that the current re-use of the 26 GHz band is around 200 with a figure of around 400 times re-use in many other comparator bands both below and above 26 GHz including 23 GHz, 15 GHz and 38 GHz);
- Applying the fees algorithm at 28 GHz to reflect the frequency and bandwidth of the spectrum authorised.
- Step 2: Apportion that UK nationwide fee (for a 2 x 112 MHz block licence) to the individual Counties or Nations (in the case of Scotland, Wales and Northern Ireland licences) based on the relative percentage of fixed links in that region in the 26 GHz band by;
  - Weighting the variety of fixed link bandwidths deployed to calculate the equivalent spectrum in use. i.e. a channel of 56 MHz has a weighting of 2 compared to a 28 MHz channel.
- Step 3: Calculate the Regional fee by summing the fees for each County or Nation authorised by the Regional licences.
- Step 4: divide by 112 to calculate a Regional fee per 2 x 1 MHz.<sup>32</sup>

5.5 The table below provides the assumptions and rationale we have made in calculating the AIP fees.

| Approach / Assumption   | Rationale  |
|---|--|
| <b>Use of 26 GHz band as a proxy for 28 GHz</b>   | The 26 GHz band is the closest fixed link band to 28 GHz and is considered to be substitutable for 28 GHz. The fee for a typical fixed link operating at 26 GHz has therefore been used as the starting point to estimate the value of the 28 GHz band. We have also looked at the geographical deployment of fixed links at 23 GHz and 38 GHz and are comfortable that there is no significant difference in this deployment compared to the 28 GHz band. |
| <b>Use of a typical channel bandwidth of 28 MHz</b>                                       | The majority of fixed links at 26 GHz currently operate at 28 MHz bandwidth. This has therefore been taken to be representative of a typical channel bandwidth for a fixed link at 26 GHz.   |
| <b>Typical Availability and Path Length factors at 28 MHz bandwidth set to value of 1</b> | These are the most common values of the factors that drive the fees for fixed links and equate to an availability of 99.99% and a path length (5.88 km)  |

<sup>32</sup> For administrative purposes we have expressed the fee at a rate of 2 x 1 MHz in order to make the process of partial trading administratively less onerous.

**Use of weighting factors according to bandwidth**

factors for fixed links operating at 28 MHz in the 26 GHz band. The value of 1 has therefore been taken to be representative of the typical parameters for a fixed link at 2 GHz.

This is to reflect the current relative demand for spectrum used by fixed links within each authorised geographical region authorised for use by the Spectrum Access 28 GHz licences. E.g. a 56 MHz channel is considered to use twice the spectrum of a 28 MHz channel

**Modification of AIP fee**

- 5.6 As indicated in the previous section, we have published a Call for Inputs on the Fixed Link Fees Review, which referenced a report we had commissioned from Plum Consulting.<sup>33</sup> This report indicated that they expect fixed link bands below 20 GHz to continue to be in excess demand and the opportunity cost is likely higher than current fees reflect; those above 30 GHz they expect are likely to have lower demand and in some cases may warrant charging an AIP floor set to reflect costs.<sup>34</sup>
- 5.7 This suggests an intermediate range between 20 GHz and 30 GHz where the level of demand is not yet clear. It is possible that some stakeholders may have formed a view on the basis of this preliminary analysis that the opportunity cost of the Spectrum Access 28 GHz licences is lower than that currently charged for fixed links in comparable frequency bands and may, therefore, decide to act on this view by, for example, trading this spectrum if they believe the fees are too high.
- 5.8 However, even if we were to accept Plum's broad proposals (which is still to be determined) we would need to consider how to transition fees, as the frequency of use increases, from a level based on AIP to a level that reflect our costs. We may need, for example, to implement a smoothing function for fees from an AIP to a cost-based fee level if there is a significant difference in the values. This smoothing is likely to be required because otherwise we would likely create a cliff edge i.e. if we went directly from AIP to cost base there might be a significant and abrupt change in fee level between two similar bands available for use by fixed links. Given the potential substitutability between bands close in frequency there is a risk that a cliff edge could cause an over-correction in the form of licensees moving from a band that is currently in excess demand into another, just because the latter is priced at cost. A smoothing function would enable us to mitigate this risk.
- 5.9 The current fee suggestions from Plum do not include any smoothing of the fees between AIP and cost. Therefore, the revised fees at 26 GHz quoted in Plum's report show them being significantly under the existing fees because they are not considered, in the Plum report, to be in excess demand. Implementing a smoothing function would likely result in the fee level reducing from AIP to a cost-based fee more gradually than suggested by Plum and, therefore, the fee set at 26 GHz would likely be set at a higher level than indicated in Plum's report.

<sup>33</sup> [http://www.plumconsulting.co.uk/pdfs/Plum\\_Apr\\_2015\\_Fixed\\_links\\_PES\\_fees\\_review.pdf](http://www.plumconsulting.co.uk/pdfs/Plum_Apr_2015_Fixed_links_PES_fees_review.pdf)

<sup>34</sup> We explain the meaning of an AIP floor in our Statement on the Strategic Review of Spectrum Pricing. This document also sets out our pricing principles and methodology. See here: <http://stakeholders.ofcom.org.uk/consultations/srsp/>

- 5.10 The future fee rate for fixed links at 26 GHz will likely therefore depend on the combined impact of our decisions on:
- the extent to which the opportunity cost of bands below 20 GHz exceeds current fee levels;
  - the first frequency band at which we believe it appropriate for the fee rate to reflect cost-based fees alone (in the event that we consider any bands should do so – and noting that this could be above 30 GHz in order to achieve the objective of smoothing the transition);
  - the value of cost-based fees; and
  - the appropriate approach to smoothing between bands that will be charged AIP and the first frequency band to be charged at an AIP floor to reflect costs.
- 5.11 The 28 GHz band is one of the higher frequency bands in the intermediate range suggested by Plum. Therefore, unless the fixed fee review concludes that the fees below 20 GHz should go up substantially, it seems likely that the fees for the 28 GHz band will be lower than the current equivalent rate for links in the 26GHz band. Therefore, by charging at the current rate without any modification to reflect the preliminary work on the Fixed Link Review there is a greater risk we would be charging a fee above the equivalent rate that could emerge from the Fixed Link Fee Review
- 5.12 Taking these factors into consideration, there is a case to reduce the fees levels that we derive on the basis of current fee rates for Ofcom assigned fixed links in other, comparable frequency bands. We do not consider that there is a sound basis to choose a particular % reduction. Rather, it is a matter of regulatory judgement and we consider that a downward modification of 50% is a reasonable basis upon which to reflect the preliminary work of the fixed link review. We should be clear that this should not be interpreted to mean fixed link fees for fixed link bands at equivalent frequencies will definitely go down from the rates charged today, as we have not yet undertaken sufficient analysis to determine either way.

## Proposed Fee rates

- 5.13 The table below provides the fee per 2 x 1 MHz for each of the Regional licences that result from the application of the methodology set out above. Annex 6 provides a breakdown of fees by County and Nation (from which the fee for a Regional licence is derived).

| Regions authorised for use by 28 GHz Spectrum Access licences  | Fee per 2 x 1 MHz |
|--|-------------------|
| A (Greater London)   | £703.63           |
| B (Greater Manchester, Merseyside and Cheshire)  | £484.30           |
| C (West Midlands, Warwickshire, Staffordshire, Worcestershire, Shropshire and Herefordshire)   | £350.28           |
| I (East Riding of Yorkshire, North Yorkshire, South Yorkshire, West Yorkshire and the areas of North Lincolnshire and North-east Lincolnshire District Councils) | £264.25           |
| J (Tyne and Wear, Durham, Northumberland, Cumbria and Lancashire)  | £234.17           |
| L (Scotland)   | £371.59           |
| N (Northern Ireland) <sup>35</sup>   | £64.40            |

<sup>35</sup> Northern Ireland only has ~ 2% of the UK total density of fixed links and there is only one licensee of Spectrum Access 28 GHz licence in Northern Ireland.

## Impact of fees on licensees

- 5.14 For the reasons below, we believe that Option 3 is unlikely to have any undue detrimental impact on licensees.
- 5.15 We considered whether to explicitly model the impacts of AIP fees relative to a representative business model for licensees of this spectrum. We have, however, chosen not to undertake a quantitative impact analysis as any such analysis is likely to involve considerable detailed work which would not be proportionate, given that:
- The resulting fees range from around £7200 and £79,000 per 2 x112 MHz Region and these amounts are likely to be relatively modest in relation to the other costs incurred by licensees to deliver services using spectrum;
  - These fees for these licences will be comparable to the fees already charged for using fixed links in nearby spectrum bands – in fact, they will be lower than this because we propose to modify the fees by 50% for the reasons set out above.
- 5.16 As noted below, we will also have the opportunity to consider a revision of the fees for these Spectrum Access 28 GHz licences, if needed, in light of the outcome of the Fixed Link Fee Review.

## Impact of fees on consumers

- 5.17 As stated below, fixed links deliver a range of end services to consumers in a range of markets. Given fixed links are typically a relatively small input to wider end services, and are themselves substitutable by other inputs, we do not believe there will be any significant detrimental impact on consumers in any of the downstream markets.

## Future review of Spectrum Access 28 GHz licence fees in light of the Fixed Link Fee Review

- 5.18 Licence fees are prescribed by Ofcom through regulations. Accordingly, once we have made the regulations for a licence class, such as these Spectrum Access 28 GHz licences, the associated fees will remain applicable until such time as we amend or revoke such these regulations, as may be appropriate.
- 5.19 In this case, we know that the Fixed Link Fee Review, which is now planned to be completed later in 2016, is likely to provide information relevant to the fees for these Spectrum Access 28 GHz licences. We therefore expect to look again at these fees in light of the emerging outcome of the Fixed Link Fee Review. However, we are currently minded to consult on revisions to the Spectrum Access 28 GHz licence fees only if the Fixed Link Fee Review gives grounds to believe that there would be a material misalignment between the level of these fees and the value of the spectrum, in keeping with our general policy on fee reviews.

## Section 6

# General effect of the Proposed Regulations on the Wireless Telegraphy (Licence Charges) Regulations 2011

## The legislative framework

- 6.1 The legal framework within which we operate is set out in the Communications Act 2003, the Wireless Telegraphy Act 2006 (WT Act 2006) and applicable EU directives, including the Authorisation and Framework Directives.
- 6.2 The Authorisation Directive requires fees to be objectively justified, transparent, non-discriminatory and proportionate. Under section 12 of the WT Act 2006, Ofcom may prescribe in regulations the sums payable in respect of wireless telegraphy licences.
- 6.3 As set out in Section 2 of this Notice, section 12 of the Act may apply to licences which have been awarded by auction, where the holder of a licence has consented to the inclusion of provisions in the licence<sup>36</sup> enabling the regulations to apply.<sup>37</sup> Where Ofcom seeks to exercise its power under section 12 of the WT Act to prescribe licence fees, section 13(2) of the Act permits us to recover sums on the basis of AIP basis. Ofcom must comply with the requirements of section 122 of the WT Act when proposing to make regulations under section 12.
- 6.4 We intend to make the Proposed Regulations, under sections 12 and 122 of the WT Act in order to set AIP licence fees in relation to the Spectrum Access 28 GHz licences. The Proposed Regulations would do this by amending the Wireless Telegraphy (Licence Charges) Regulations 2011. A draft of the Proposed Regulations is included in Annex 7 of this document.

## Proposed Regulations

- 6.5 The Proposed Regulations would:
- Implement AIP licence fees based on AIP as of 1 January 2016 for the Spectrum Access 28 GHz licences (formerly named BFWA).

## Extent of application

- 6.6 The Proposed Regulations are only applicable to Spectrum Access 28 GHz licences (formerly named BFWA), varied on request, and in the specified regions of authorised use by these licences.
- 6.7 The Proposed Regulations will apply to the UK and the Channel Islands generally, with specific effect to the Spectrum Access 28 GHz licences (previously the BWFA licences) which have been awarded in the areas detailed in Annex 5 of this document.

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<sup>36</sup> This can, for example, be as a condition we impose as a result of a request to vary a licence as in this case, or as a condition included in the licence when we auction spectrum.

<sup>37</sup> See footnote 6.



## Annex 1

# Responding to this consultation

## How to respond

- A1.1 Ofcom invites written views and comments on the issues raised in this document, to be made **by 5pm on 2 November 2015**.
- A1.2 Ofcom strongly prefers to receive responses using the online web form at <http://stakeholders.ofcom.org.uk/consultations/fees-spectrum-access-28ghz-licences/howtorespond/form>, as this helps us to process the responses quickly and efficiently. We would also be grateful if you could assist us by completing a response cover sheet (see Annex 3), to indicate whether or not there are confidentiality issues. This response coversheet is incorporated into the online web form questionnaire.
- A1.3 For larger consultation responses - particularly those with supporting charts, tables or other data - please email: [Spectrumaccessconsult@ofcom.org.uk](mailto:Spectrumaccessconsult@ofcom.org.uk) attaching your response in Microsoft Word format, together with a consultation response coversheet.
- A1.4 Responses may alternatively be posted or faxed to the address below, marked with the title of the consultation.
- Cliff Mason
- Ofcom,  
Floor 3  
Spectrum Group  
Sector Policy Team  
Riverside House  
2A Southwark Bridge Road  
London SE1 9HA
- A1.5 Note that we do not need a hard copy in addition to an electronic version. Ofcom will acknowledge receipt of responses if they are submitted using the online web form but not otherwise.
- A1.6 It would be helpful if your response could include direct answers to the questions asked in this document. It would also help if you can explain why you hold your views and how Ofcom's proposals would impact on you.

## Further information

- A1.7 If you want to discuss the issues and questions raised in this consultation, or need advice on the appropriate form of response, please contact Cliff Mason on 020 7783 4353



## Confidentiality

- A1.8 We believe it is important for everyone interested in an issue to see the views expressed by consultation respondents. We will therefore usually publish all responses on our website, [www.ofcom.org.uk](http://www.ofcom.org.uk), ideally on receipt. If you think your response should be kept confidential, can you please specify what part or whether all of your response should be kept confidential, and specify why. Please also place such parts in a separate annex.
- A1.9 If someone asks us to keep part or all of a response confidential, we will treat this request seriously and will try to respect this. But sometimes we will need to publish all responses, including those that are marked as confidential, in order to meet legal obligations.
- A1.10 Please also note that copyright and all other intellectual property in responses will be assumed to be licensed to Ofcom to use. Ofcom's approach on intellectual property rights is explained further on its website at <http://www.ofcom.org.uk/terms-of-use/>

## Next steps

- A1.11 Following the end of the consultation period, Ofcom intends to publish a statement later in 2015.
- A1.12 Please note that you can register to receive free mail Updates alerting you to the publications of relevant Ofcom documents. For more details please see: <http://www.ofcom.org.uk/email-updates/>

## Ofcom's consultation processes

- A1.13 Ofcom seeks to ensure that responding to a consultation is easy as possible. For more information please see our consultation principles in Annex 2.
- A1.14 If you have any comments or suggestions on how Ofcom conducts its consultations, please call our consultation helpdesk on 020 7981 3003 or e-mail us at [consult@ofcom.org.uk](mailto:consult@ofcom.org.uk) . We would particularly welcome thoughts on how Ofcom could more effectively seek the views of those groups or individuals, such as small businesses or particular types of residential consumers, who are less likely to give their opinions through a formal consultation.
- A1.15 If you would like to discuss these issues or Ofcom's consultation processes more generally you can alternatively contact Graham Howell, Secretary to the Corporation, who is Ofcom's consultation champion:

Graham Howell  
Ofcom  
Riverside House  
2a Southwark Bridge Road  
London SE1 9HA

Tel: 020 7981 3601

Email [Graham.Howell@ofcom.org.uk](mailto:Graham.Howell@ofcom.org.uk)

## Annex 2

# Ofcom's consultation principles

A2.1 Ofcom has published the following seven principles that it will follow for each public written consultation:

### Before the consultation

A2.2 Where possible, we will hold informal talks with people and organisations before announcing a big consultation to find out whether we are thinking in the right direction. If we do not have enough time to do this, we will hold an open meeting to explain our proposals shortly after announcing the consultation.

### During the consultation

A2.3 We will be clear about who we are consulting, why, on what questions and for how long.

A2.4 We will make the consultation document as short and simple as possible with a summary of no more than two pages. We will try to make it as easy as possible to give us a written response. If the consultation is complicated, we may provide a shortened Plain English Guide for smaller organisations or individuals who would otherwise not be able to spare the time to share their views.

A2.5 We may consult for up to 10 weeks depending on the potential impact of our proposals.

A2.6 A person within Ofcom will be in charge of making sure we follow our own guidelines and reach out to the largest number of people and organisations interested in the outcome of our decisions. Ofcom's 'Consultation Champion' will also be the main person to contact with views on the way we run our consultations.

A2.7 If we are not able to follow one of these principles, we will explain why.

### After the consultation

A2.8 We think it is important for everyone interested in an issue to see the views of others during a consultation. We would usually publish all the responses we have received on our website. In our statement, we will give reasons for our decisions and will give an account of how the views of those concerned helped shape those decisions.

## Annex 3

# Consultation response cover sheet

- A3.1 In the interests of transparency and good regulatory practice, we will publish all consultation responses in full on our website, [www.ofcom.org.uk](http://www.ofcom.org.uk).
- A3.2 We have produced a coversheet for responses (see below) and would be very grateful if you could send one with your response (this is incorporated into the online web form if you respond in this way). This will speed up our processing of responses, and help to maintain confidentiality where appropriate.
- A3.3 The quality of consultation can be enhanced by publishing responses before the consultation period closes. In particular, this can help those individuals and organisations with limited resources or familiarity with the issues to respond in a more informed way. Therefore Ofcom would encourage respondents to complete their coversheet in a way that allows Ofcom to publish their responses upon receipt, rather than waiting until the consultation period has ended.
- A3.4 We strongly prefer to receive responses via the online web form which incorporates the coversheet. If you are responding via email, post or fax you can download an electronic copy of this coversheet in Word or RTF format from the 'Consultations' section of our website at <http://stakeholders.ofcom.org.uk/consultations/consultation-response-coversheet/>.
- A3.5 Please put any parts of your response you consider should be kept confidential in a separate annex to your response and include your reasons why this part of your response should not be published. This can include information such as your personal background and experience. If you want your name, address, other contact details, or job title to remain confidential, please provide them in your cover sheet only, so that we don't have to edit your response.

## Cover sheet for response to an Ofcom consultation

### BASIC DETAILS

Consultation title:

To (Ofcom contact):

Name of respondent:

Representing (self or organisation/s):

Address (if not received by email):

### CONFIDENTIALITY

Please tick below what part of your response you consider is confidential, giving your reasons why

Nothing

☐

Name/contact details/job title

☐

Whole response

☐

Organisation

☐

Part of the response

☐

If there is no separate annex, which parts?

If you want part of your response, your name or your organisation not to be published, can Ofcom still publish a reference to the contents of your response (including, for any confidential parts, a general summary that does not disclose the specific information or enable you to be identified)?

### DECLARATION

I confirm that the correspondence supplied with this cover sheet is a formal consultation response that Ofcom can publish. However, in supplying this response, I understand that Ofcom may need to publish all responses, including those which are marked as confidential, in order to meet legal obligations. If I have sent my response by email, Ofcom can disregard any standard e-mail text about not disclosing email contents and attachments.

Ofcom seeks to publish responses on receipt. If your response is non-confidential (in whole or in part), and you would prefer us to publish your response only once the consultation has ended, please tick here.

☐

Name

Signed (if hard copy)

## Annex 4

# Current algorithm for fixed links

A4.1 The current fixed link fee algorithm<sup>38</sup> is as follows:

*Fee per fixed link =*

*Reference fee x band factor (bf) x bandwidth (BW) x availability (Af) x path length factor (Plf)*

Where:

- *Reference fee* – this is the reference spectrum price, and is currently set at £88 per 2 x 1 MHz for a bi-directional link (£ per 2x1 MHz)
- *Bandwidth factor* – the value of the actual system bandwidth (multiple of 2x1 MHz)
- *Frequency band factor* – the band factor set for each frequency band
- *Path length factor* – the path length factor is determined by the actual path length (Pl) and the minimum path length (Mpl) that is specific in Interface Regulation IR 2000 version 5
- *Availability factor* – determined from the required system availability.

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<sup>38</sup> <https://licensing.ofcom.org.uk/binaries/spectrum/fixed-terrestrial-links/guidance-for-licensees/FeeCalcDoc.pdf>

## Annex 5

# Regions of authorised use for Spectrum Access Licences

- A5.1 The Spectrum Access 28 GHz licences that were previously named the “BFWA licences” were auctioned in accordance with the Wireless Telegraphy (Broadband Fixed Wireless Access Licences) Regulations 2000. The Schedule to those Regulations sets out the geographic regions in which those licences would be awarded, as reflected in the table below.<sup>39</sup>
- A5.2 Those regions in red relate to the regions where licences were awarded in November 2000. The Proposed Regulations shall apply in these regions. Those regions in black represent the regions where spectrum was not sold in November 2000, but was subsequently auctioned in February 2008. These regions are not within the scope of this particular fee review and the Proposed Regulations shall therefore not apply in these regions.

|                 |  |
|-----------------|--|
| <b>Region A</b> | Greater London   |
| <b>Region B</b> | Greater Manchester, Merseyside and Cheshire  |
| <b>Region C</b> | West Midlands, Warwickshire, Staffordshire, Worcestershire<br>Shropshire and Herefordshire   |
| <b>Region D</b> | Isle of Wight, Hampshire, Berkshire and Oxfordshire  |
| <b>Region E</b> | Essex, Hertfordshire and Buckinghamshire   |
| <b>Region F</b> | Suffolk, Norfolk, Bedfordshire, Cambridgeshire and<br>Northamptonshire   |
| <b>Region G</b> | Derbyshire, Lincolnshire (other than the areas of North Lincolnshire<br>and North-East Lincolnshire District Councils), Leicestershire,<br>Nottinghamshire and Rutland |
| <b>Region H</b> | Kent, Surrey, East Sussex and West Sussex  |
| <b>Region I</b> | East Riding of Yorkshire, North Yorkshire, South Yorkshire, West<br>Yorkshire and the areas of North Lincolnshire and North-east<br>Lincolnshire District Councils     |
| <b>Region J</b> | Tyne and Wear, Durham, Northumberland, Cumbria and<br>Lancashire   |
| <b>Region K</b> | Bristol, Devon, Cornwall and Isles of Scilly, Dorset, Somerset,<br>Wiltshire and Gloucestershire   |
| <b>Region L</b> | Scotland   |
| <b>Region M</b> | Wales  |
| <b>Region N</b> | Northern Ireland   |

<sup>39</sup> [http://www.ofcom.org.uk/static/archive/ra/topics/bfwa/doc28ghz/auc\\_not/notice.htm](http://www.ofcom.org.uk/static/archive/ra/topics/bfwa/doc28ghz/auc_not/notice.htm)

## Annex 6

# County and nationwide fees for regions of authorised use for Spectrum Access 28 GHz licences

A6.1 Note, Scotland and Northern Ireland are defined at a national level in the Schedule to the Wireless Telegraphy (Broadband Fixed Wireless Access Licences) Regulations 2000, rather than at a county level as applies in the rest of the UK.

| Region | County   | AIP fee (per 2 x 1 MHz) |
|--------|--|-------------------------|
| A      | Greater London Authority                               | £703.63                 |
| B      | Greater Manchester                                     | £297.30                 |
|        | Merseyside   | £88.28                  |
|        | Cheshire   | £98.72                  |
| C      | West Midlands  | £180.22                 |
|        | Warwickshire   | £39.83                  |
|        | Staffordshire  | £67.79                  |
|        | Worcestershire   | £44.92                  |
|        | Shropshire   | £11.02                  |
|        | Herefordshire  | £6.50                   |
| I      | East Riding of Yorkshire                               | £3.11                   |
|        | North Yorkshire  | £27.54                  |
|        | South Yorkshire  | £70.48                  |
|        | West Yorkshire   | £159.88                 |
|        | The areas of North Lincolnshire District Councils      | £2.68                   |
|        | The areas of North-east Lincolnshire District Councils | £0.56                   |
| J      | Tyne and Wear  | £57.06                  |
|        | Durham   | £19.21                  |
|        | Northumberland   | £8.19                   |
|        | Cumbria  | £76.13                  |
|        | Lancashire   | £73.58                  |
| L      | Scotland   | £371.59                 |
| N      | Northern Ireland                                       | £64.40                  |

## Annex 7

# Proposed Regulations

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## STATUTORY INSTRUMENTS

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**2015 No.000**

### ELECTRONIC COMMUNICATIONS

#### The Wireless Telegraphy (Licence Charges) (Amendment) (No.2) Regulations 2015

*Made* - - - - *XX December 2015*

*Coming into force* - - *XX December 2015*

The Office of Communications (“OFCOM”) make the following Regulations in exercise of the powers conferred by sections 12, 13(2) and 122 of the Wireless Telegraphy Act 2006<sup>(40)</sup> (the “Act”).

Before making these Regulations, OFCOM have given notice of their proposal to do so in accordance with section 122(4)(a) of the Act, published notice of their proposal in accordance with section 122(4)(b) of the Act, and have considered the representations made to them before the time specified in the notice in accordance with section 122(4)(c) of the Act.

#### Citation and commencement

**1.**—(1) These Regulations may be cited as the Wireless Telegraphy (Licence Charges) (Amendment) (No.2) Regulations 2015 and shall come into force on XX 2016.

#### Amendment of the Wireless Telegraphy (Licence Charges) Regulations 2011

**2.** The Wireless Telegraphy (Licence Charges) Regulations 2011<sup>(41)</sup> (“the principal Regulations”) shall be amended in accordance with the following provisions of these Regulations.

#### Amendment of Regulation 2

**3.** In regulation 2 of the principal Regulations, before the definition ““the 2004 Regulations” means the Wireless Telegraphy (Spectrum Trading) Regulations 2004”, insert the following definition—

““the 2000 Regulations” means the Wireless Telegraphy (Broadband Fixed Access Licences) Regulations 2000<sup>(42)</sup>”;

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<sup>(40)</sup> 2006 c.36; sections 12, 13(2) and 122(7) were extended to the Bailiwick of Guernsey by article 2 of the Wireless Telegraphy (Guernsey) Order 2006 (S.I. 2006/3325); to the Bailiwick of Jersey by article 2 of the Wireless Telegraphy (Jersey) Order 2006 (S.I. 2006/3324); and to the Isle of Man by article 2 of the Wireless Telegraphy (Isle of Man) Order 2007 (S.I. 2007/278).

<sup>(41)</sup> S.I. 2011/1128 as amended by S.I. 2012/1075, S.I. 2013/917, S.I. 2014/1295 and S.I. 2015/1334.

<sup>(42)</sup> S.I. 2000/2039.



## Insertion of Regulation 7

### 4. After Regulation 6, insert—

#### **“Licence charges payable for the 28 GHz frequency band**

7.—(1) On 1 January 2016 and on each anniversary of that date, each holder of a Spectrum Access 28 GHz licence authorising the use of frequencies in the frequency ranges 28.0525—28.4445 GHz paired with 29.0605—29.4525 GHz shall pay to Ofcom the charges prescribed in paragraph (2).

(2) The charges which must be paid in accordance with paragraph (1) are:

- (a) £703.63 for each 2 x 1 MHz channel in Region A, as defined in Part 1 of the Schedule to the 2000 Regulations;
- (b) £484.30 for each 2 x 1 MHz channel in Region B, as defined in Part 1 of the Schedule to the 2000 Regulations;
- (c) £350.28 for each 2 x 1 MHz channel in Region C, as defined in Part 1 of the Schedule to the 2000 Regulations;
- (d) £264.25 for each 2 x 1 MHz channel in Region I, as defined in Part 1 of the Schedule to the 2000 Regulations;
- (e) £234.17 for each 2 x 1 MHz channel in Region J, as defined in Part 1 of the Schedule to the 2000 Regulations;
- (f) £371.59 for each 2 x 1 MHz channel in Region L, as defined in Part 1 of the Schedule to the 2000 Regulations; and
- (g) £64.40 for each 2 x 1 MHz channel in Region N, as defined in Part 1 of the Schedule to the 2000 Regulations.”

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Group Director, Spectrum Group

XX December 2015

For and by the authority of the Office of Communications

### **EXPLANATORY NOTE**

*(This note is not part of the Regulations)*

These Regulations amend the Wireless Telegraphy (Licence Charges) Regulations 2011 (S.I. 2011/1128 as amended by S.I. 2012/1075, S.I. 2013/917, S.I. 2014/1295 and S.I. 2015/1334).

These Regulations prescribe the charges which are payable for licences using frequencies in the 28 GHz spectrum band in certain geographic regions of the United Kingdom, as defined in Part 1 of the Schedule to the Wireless Telegraphy (Broadband Fixed Wireless Access Licences) Regulations 2000.

A full regulatory impact assessment of the effect that these Regulations will have on the costs to business is available to the public from the Office of Communication’s (“OFCOM”) Library at Riverside House, 2A Southwark Bridge Road, London, SE1 9HA (Tel: 020 7981 3000) and on OFCOM’s website at [www.ofcom.org.uk](http://www.ofcom.org.uk). Copies of this assessment have also been placed in the library of the House of Commons.