



Variation of 28 GHz Broadband Fixed Wireless Access Licences

Consulting on licence variation
requests by Urban Wimax and
Cable & Wireless

Consultation

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Contents

Section		Page
1	Executive Summary	1
2	Legal framework	3
3	28 GHz Broadband Fixed Wireless Access	5
4	Options for 28GHz access rights post 2015	11
5	Options for applying fees from 2016	16
6	Provisional Conclusion: Proposal to Vary 28 GHz BFWA Licences	18

Annex		Page
1	Responding to this consultation	19
2	Ofcom's consultation principles	21
3	Consultation response cover sheet	22
4	Consultation questions	24

Section 1

Executive Summary

- 1.1 Ofcom has received requests from Urban Wimax Limited and from Cable & Wireless UK to vary their 28 GHz Broadband Fixed Wireless Access (BFWA) licences by extending the duration of the licences indefinitely beyond the current expiry date of 31 December 2015.
- 1.2 This document assesses these requests and in doing so:
- provides background information on the 28 GHz band and licences;
 - sets out Ofcom's statutory and policy framework;
 - considers the implications for other users in the band;
 - considers the request in the light of Ofcom's statutory duties;
 - addresses what we consider to be the two main alternative options for authorising use of the 28 GHz spectrum after 2015, namely licence variation or auction; and
 - considers options for setting an appropriate level for spectrum fees in the event we decide to vary the licences.
- 1.3 Having considered the relevant factors in relation to each option and subject to responses to this consultation, our preferred option is to proceed as follows:
- we believe it is appropriate and proportionate to agree to the variation of Urban Wimax's and Cable & Wireless's licences as requested;
 - we consider that any variation should be made as soon as practicable;
 - we propose to offer the variation to all other holders of this class of licence;
 - we would ensure that any variation would make the administrative licence terms consistent with the majority of other licence classes awarded and managed by Ofcom;
 - we would align the technical conditions of the licences with those awarded in 2008 in these and adjacent spectrum bands: this would remove unnecessary restrictions on the use of the spectrum and facilitate consolidation of spectrum and areas where appropriate;
 - an indefinite licence duration subject to spectrum fees after the initial term would be consistent with all other licence classes awarded by Ofcom through auctions.
- 1.4 We seek stakeholders' views on Urban Wimax's and Cable & Wireless's requests and our assessment of them. We will carefully consider any representations made in response to this consultation before reaching a final decision.

- 1.5 We are asking stakeholders to consider the following specific questions when responding to this consultation, although stakeholders should feel free to make any other points in response:

Q1 Do you agree that Ofcom should grant Urban Wimax's and Cable & Wireless's requests to vary their licences as soon as practicable?

Q2 Do you agree with our proposal to align the technical conditions of the licences with those awarded in 2008 in these and adjacent spectrum bands?

Q3 Do you agree with Ofcom's proposals to set an AIP fee level in context with the review of fees within bands used for fixed links?

Q4 Do you agree that Ofcom should offer this variation to other BFWA licence holders?

Section 2

Legal framework

Introduction

- 2.1 On 14 August 2012 we received an application to vary Urban Wimax's 28 GHz licence to extend the duration indefinitely after its current expiry date of 31 December 2015, subject to the application of administered incentive pricing (AIP) spectrum fees from 2016. During the period we were considering this and preparing this consultation we received, on 7 December 2012, a similar application from Cable & Wireless. This document sets out our consideration of these applications and our related proposals.
- 2.2 Any variation of a wireless telegraphy licence must be considered in accordance with the requirements of the Authorisation Directive and the Framework Directive¹ as implemented by the Wireless Telegraphy Act 2006 (the "2006 Act") and the Communications Act 2003 (the "2003 Act").
- 2.3 Article 14 of the Authorisation Directive requires that rights, conditions and procedures concerning rights of use (in this case a wireless telegraphy licence) "*may only be amended in objectively justified cases and in a proportionate manner*".
- 2.4 More generally, in carrying out our regulatory tasks, including considering the case for amending rights of use, we are required to take all reasonable measures which are aimed at achieving the objectives set out in Article 8 of the Framework Directive. Article 8 requires national regulatory authorities to promote competition, *inter alia*:
- by ensuring that there is no distortion or restriction of competition in the electronic communications sector; and
 - by encouraging efficient use and ensuring the effective management of radio frequencies.
- 2.5 This is reflected in our duties under the 2003 Act and the 2006 Act, in particular in:
- our principal duty to further the interests of citizens in relation to communications matters and consumers, where appropriate by promoting competition;
 - the requirement to secure the optimal use of the spectrum; and
 - the requirement to have regard to the desirability of promoting the efficient management and use of the part of the electromagnetic spectrum available for wireless telegraphy.

¹ Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive) as amended by Directive 2009/140/EC and Regulation 544/2009.

Process for considering a licence variation request

- 2.6 In terms of process, Article 14 of the Authorisation Directive requires that Member States must ensure that, except where proposed amendments are minor and have been agreed with the licensee:
- notice of the proposed change is given in an appropriate manner; and
 - interested parties, including users and consumers, are allowed a sufficient period of time to express their views on the proposed amendments (such time to be no less than four weeks except in exceptional cases).
- 2.7 The 2006 Act sets out in Schedule 1 a process for the variation of wireless telegraphy licences. In the case where a variation is proposed by the licensee, we are under no obligation (under the 2006 Act) to consult on the proposal, subject to the requirements of the Authorisation Directive set out above.
- 2.8 Section 7 of the 2003 Act provides that where we are proposing to do anything for the purposes of or in connection with the carrying out of our functions, and it appears to us that the proposal is important, then we are required to carry out and publish an assessment of the likely impact of implementing the proposal, or a statement setting out our reasons for thinking that it is unnecessary to carry out such an assessment. Where we publish such an assessment, stakeholders must have an opportunity to make representations to us about the proposal to which the assessment relates.
- 2.9 The variation of Urban Wimax's and Cable & Wireless's 28 GHz licences and other applicable licences in the band in our view may not be considered to be a minor variation by interested third parties. On that basis, notwithstanding that the variation is at the request of and therefore with the consent of the licensee, we consider that we should give interested third parties an opportunity to make representations to us on this matter.
- 2.10 We have set out our consideration of the proposed variation in section 4. A separate impact assessment is therefore not considered necessary as this would duplicate that section of the consultation.

Section 3

28 GHz Broadband Fixed Wireless Access

BFWA and Spectrum Access Licences in the 28 GHz band

- 3.1 In November 2000, the DTI Radiocommunications Agency held an auction² for the use of radio frequencies in the 28 GHz band. Three spectrum lots, each of 2 x 112 MHz bandwidth were offered in 14 geographic regions of the UK.
- 3.2 16 licences were awarded, some in each of the three spectrum allocations. One licence was subsequently surrendered and many others have since changed ownership through spectrum trading. 15 Licences are currently held by 5 companies, Cable & Wireless (UK) Ltd (4 licences), Chorus Communications Ltd (1 licence), Telefónica UK Ltd (6 licences), Urban Wimax Ltd (1 licence) and UK Broadband Ltd (3 licences).
- 3.3 The licences were awarded for a period until 31 December 2015. The purpose of this consultation is to consider the conditions for authorising use of that spectrum after the expiry of the current licence(s).
- 3.4 In 2008, as part of a wider award process, unallocated spectrum in the 28 GHz band was auctioned, including the remaining geographic areas in the 3 paired spectrum allocations unsold in 2000, the one area that had been surrendered by its licensee and two further national allocations adjacent to the original award bands.
- 3.5 These licences, consolidating the remaining areas in each of the three 28 GHz bands ("Sub National" licences 1,2 & 3 respectively), are now held by Vodafone Ltd (1) and UK Broadband Ltd (2 & 3). The two national allocations were both awarded to Arqiva Ltd and were consolidated into a single national licence. By contrast to the original award, the licences issued in 2008 were granted for an initial period of 15 years and will thereafter continue in force until surrendered, traded or revoked. We expect they will become subject to administered incentive pricing (AIP) after the end of the initial licensing period.

28 GHz Spectrum Allocations

- 3.6 Three licence packages (BFWA) were auctioned in each region in October 2000 and, correspondingly, three sub national packages (Spectrum Access) comprising the unsold regions for each of those packages are each of 2 x 112 MHz bandwidth, separated by a guard channel of 28 MHz. The two further packages auctioned with the sub national packages in 2008 (both purchased by Arqiva Limited) were also of 2 x 112 MHz but without guard channels, abutting each other and the lower BFWA 1 package. These were amalgamated into a single 2 x 228 MHz licence package to Arqiva.
- 3.7 Figure 1 below shows the spectrum packages. Figures 2 and 3 below that describe the spectrum pairings and show the current licensees in their geographic regions. Figure 4 shows the geographic regions covered by each licence.

² [28 GHz Broadband Fixed Wireless Access \(BFWA\) - 2000 Auction](#)

Figure 1 : Spectrum Packages

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

Figure 2: Frequencies in the 28 GHz Spectrum Band

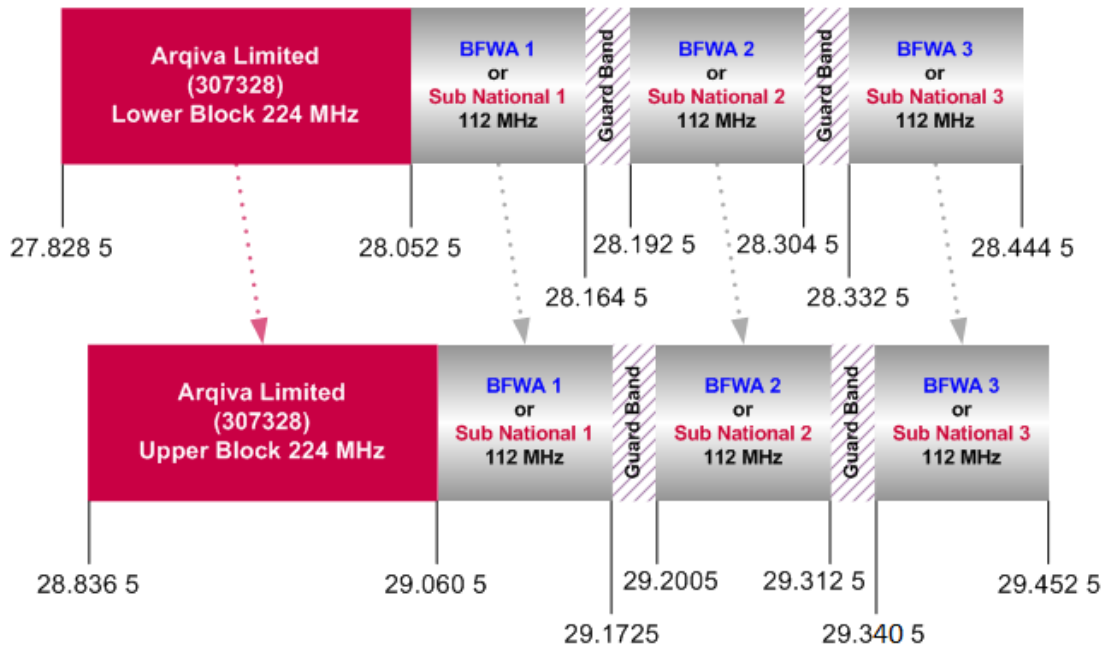


Figure 3: Current licensees, geographical and spectrum adjacencies

	Spectrum Access National (2 x 224 MHz)	BWA 1 OR Spectrum Access Sub-National 1 (2 x 112MHz)	BWA 2 / BWA 2* OR Spectrum Access Sub-National 2 (2 x 112MHz)	BWA 3 / BWA 3* OR Spectrum Access Sub-National 3 (2 x 112MHz)
A	Arqiva	Telefónica UK	Urban Wimax *	UK Broadband *
B		Cable & Wireless	Telefónica UK	
C		Telefónica UK	Cable & Wireless	
D		Vodafone	UK Broadband	UK Broadband
E				
F				
G		Telefónica UK	Cable & Wireless	UK Broadband
H				
I		Vodafone	UK Broadband	UK Broadband
J				
K				
L		Telefónica UK	Chorus Comms	UK Broadband
M				
N		Telefónica UK	Chorus Comms	

Figure 4 : Geographic Regions



Technical Conditions

3.8 The original BFWA licences (shaded in figure 3, above) were constrained by the technology-specific requirements of Interface Requirement IR 2043³ (coloured blue). The 2008 licences instead have a block-edge mask and the more liberal in-band

³ [IR 2043 - Broadband Fixed Wireless Access radio systems operating in the 28 GHz frequency band](#)

technical requirements of IR 2048⁴ (coloured red). At the request of two licensees, the technical schedules of some or the original (2000) licences were varied to align with the IR 2048 requirements (now held by Urban Wimax and UK Broadband - coloured red and marked with an asterisk*).

- 3.9 We indicated when consulting on those variations that we would similarly update the technical conditions of other BFWA licences on request. We now propose to do this automatically if licences are re-issued following the outcome of this consultation as this is a liberalising measure which removes unnecessary constraints from licences, while not impacting any use under the current licence terms and conditions.

⁴ [IR 2048 - Spectrum Access 28 GHz](#)

Licence Trades

- 3.10 Most of the 15 BFWA licences have been traded, some several times, and so are no longer held by the original bidders from the 2000 auction.
- The BFWA licence now held by Urban Wimax was bought from Broadnet, the first holder;
 - The BFWA licences now held by Telefónica were bought from Cambridge Broadband, which bought from Fastnet Spectrum Holdings, which bought from Energis, the first holder;
 - The BFWA licences now held by Cable & Wireless were bought from Thus PLC (formerly Your Communications, formerly Norweb) the first holder;
 - The BFWA licences now held by UK Broadband were bought from Faultbasic, the first holder.

Auctioned Licences

- 3.11 28 GHz BFWA is one of only three classes of licence that were auctioned in the UK, prior to the creation of Ofcom, by the Radiocommunications Agency. The other classes of licence were the Third Generation (3G) Mobile Licence auction for UMTS in April 2000 and the 3.5 GHz Wireless Access Licence in June 2003.
- 3.12 In the case of 3.5 GHz though, the access rights to the spectrum revert to the Ministry of Defence after the expiry of the licence in July 2018 and so the only direct comparison here is between BFWA and UMTS (3G) licences.
- 3.13 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.

Comparison with other auctioned licences

- 3.14 In December 2010, the Government directed Ofcom to vary the terms of 3G Licences and Ofcom consulted on doing so in February 2011⁵. The terms of the variation include that the licences will:
- continue in force indefinitely after the end of the initial term;
 - become subject to an annual charge after the end of the initial term;
 - be subject to revocation for spectrum management reasons, only after the exercise of at least 5 years' notice.

⁵ <http://stakeholders.ofcom.org.uk/binaries/consultations/2100-MHz-Third-Generation-Mobile/summary/main.pdf>

- 3.15 On 20 June 2011 we published a statement⁶ of the decision to vary the licences of operators that consent to the changes set out. All 3G licensees have since consented to the variation and the licences have been varied accordingly.
- 3.16 In consequence, the 28 GHz BFWA licence category is now the only auctioned product (aside from the 3.5 GHz spectrum returning to MoD in 2018) which has a set end-date.

Figure 4 – Auctioned Licences

Licence Category	Auctioned	By	Initial term until	Duration	AIP from
UMTS / 3G	April 2000	RA	December 2021	Indefinite *	January 2022
28 GHz BFWA	November 2000	RA	December 2015	December 2015	N/A
10, 28, 32 & 40 GHz	February 2008	Ofcom	20 February 2023	Indefinite	February 2023
1781.7-1785 / 1876.7-1880 MHz	May 2006	Ofcom	May 2016	Indefinite	May 2016
412-414 / 422-424 MHz	October 2006	Ofcom	October 2021	Indefinite	October 2021
1785 MHz (Northern Ireland)	May 2007	Ofcom	May 2022	Indefinite	May 2022
L-Band – 1452-1492 MHz	May 2008	Ofcom	May 2023	Indefinite	May 2023
542-550 MHz (Manchester) 758-766 MHz (Cardiff)	January 2009	Ofcom	October 2026	Indefinite	October 2026
3.5 GHz Spectrum Access	July 2003	RA	N/A	July 2018	Spectrum reverts to MoD

* Following variation to extend the licence duration indefinitely.

⁶ <http://stakeholders.ofcom.org.uk/consultations/2100-MHz-Third-Generation-Mobile/statement/>

Section 4

Options for 28GHz access rights post 2015

4.1 In this section we consider:

- the case for taking action now to establish clear spectrum access rights post 2015 in respect of the 28GHz licences covered by this consultation;
- the options for how such rights might be established;
- a comparison between these options; and
- our provisional conclusions.

Case for establishing clear spectrum access rights post 2015

- 4.2 A number of stakeholders have raised questions and expressed concerns about the uncertainty over what will happen with the spectrum covered by these licences when their current term ends. Some of the BFWA licensees have asked for clarification of what will happen to the spectrum after the 2015 licence end-date. We have also been approached by parties interested in trading these licences as this issue is a key factor relevant to the value of any potential spectrum trade. Urban Wimax has now submitted a request for a variation to extend the duration of its licence. Cable & Wireless (now part of the Vodafone group) subsequently made a similar enquiry to Ofcom about the end-date and has submitted its own variation request.
- 4.3 Urban Wimax states that it is currently unable to justify investment in the development of services within this band because of the limited time remaining that the spectrum is available to them. Urban Wimax further maintains that that this has impeded them in responding to market opportunities for which the spectrum could be utilised. This means that the services they might otherwise have been able to deploy are not available to consumers.
- 4.4 Without clarity on the future licensing of the spectrum, we consider that the development of services and further investment over the next 3 years is likely to become increasingly difficult for Urban Wimax and other licensees to justify. This could result in the band being inefficiently used until the current licences expire and possibly longer which would result in a sub-optimal use of the spectrum meanwhile.
- 4.5 Cable and Wireless states that the Vodafone group intends to commit significant investment in new microwave equipment within the regions covered by their four licences. Given the estimated lifetime of such equipment, the investment can only be justified if there is security of use of the spectrum past the current expiry dates of the licences.
- 4.6 The current uncertainty over future access rights to this spectrum also creates risks over continuity of service for consumers using services provided by BFWA licensees with consequent challenges for those licensees developing services in the band. Similarly, where 28 GHz BFWA licences are held alongside adjacent regions (or adjacent spectrum in a particular region) by a single operator, it would not be possible for them to offer seamless longer-term services to end users where such services span these adjacencies.

- 4.7 In summary, the uncertainty created by the approaching expiry date of the licences is in our view likely to inhibit investment and service development in this spectrum for so long as there is uncertainty about the usage rights post-2015. In light of our duty to promote the optimal use of spectrum, we consider that it is appropriate that we take steps now to remove this uncertainty and establish clear spectrum access rights post 2015 in respect of this spectrum.

Options for establishing clear spectrum access rights post 2015

- 4.8 There are in our view two main options for establishing clear spectrum access rights post 2015 in respect of the spectrum covered by the current 28GHz licences that are due to expire at end 2015:
- To vary the current licences, extending them to indefinite duration; or
 - To hold an auction to re-award the spectrum access rights, to run from 2016.
- 4.9 The licence variation applications from both Urban Wimax and Cable and Wireless request that we adopt the first of these approaches.

Variation to make existing licences indefinite

- 4.10 The main features of this option would be to:
- vary the existing licences so that they become indefinite, subject to 5-years notice of revocation for spectrum management reasons;
 - apply annual spectrum licence fees from January 2016;
 - vary the technical licence conditions to align them with Interface Requirement IR 2048.
- 4.11 Under this approach, we propose that the option to take up this variation would be open to any current holder of a 28 GHz BFWA licence (in addition to Urban Wimax and Cable and Wireless who have already requested a variation along these lines).

Auction of new spectrum rights from 2016

- 4.12 Under this approach, the spectrum covered by the current 28GHz BFWA licences could be:
- packaged into new licences that match the existing licences in terms of their spectrum and geographic coverage but which run indefinitely from January 2016 (but with an initial period in which no annual licence fees would be payable) and which align technical licence conditions with IR 2048; and
 - awarded via an auction process.
- 4.13 The auction would be open to both incumbent licensees and new applicants. The auction would be held as far in advance of 2016 as feasible to give clarity for current licensees to exploit the spectrum themselves (if successful in the auction) and/or to facilitate the trade of the remaining unexpired licence duration (whether or not they are successful in the auction).

- 4.14 If the packages offered for auction match the existing licences (so as to give the current licensees the opportunity to re-acquire their existing spectrum) then there would be 15 lots. The auction design could take one of several possible formats, for example: a sealed bid auction for each separate lot, an ascending price auction for each separate lot or a combinatorial clock auction where participants can submit bids for packages that combine different lots. These auction designs vary considerably in terms of their complexity to design, implement and execute, with the combinatorial clock design being the most time consuming and resource intensive. However, we also note that a combinatorial clock design is the only one of these that addresses the case where different lots are either substitutes for, or complements to, each other (so that the value a bidder places on one particular lot is dependent on whether or not they are successful in acquiring other lots). It is very likely that the 15 licences, or auction lots, that would form part of an auction in this case would indeed have strong complementarity and substitution characteristics.

Comparison of Options

- 4.15 We consider that the following factors are of most relevance to our assessment of the options for establishing spectrum access rights post 2015:
- Allocative efficiency;
 - Duration of period of uncertainty;
 - Proportionality of implementation effort and cost.
- 4.16 When assessing the options with respect to these factors, we have paid particular attention to the requirement on us to secure optimal use of spectrum and to our duty to have regard to the promotion of efficient management and use of spectrum.

Allocative efficiency

- 4.17 Ofcom's statutory duties require us to secure the optimal use of the radio spectrum. In order for that to happen, we consider that the spectrum needs to be placed into the hands of parties that can create the most value through its use, with licence conditions that maximise the potential for the licensees to achieve this.
- 4.18 The licence variation option would result in the post 2015 spectrum rights being held by the current licence holders. We do not know if these current holders are the parties that will be able to create the most value through use of the spectrum in future. However, if they are not, then the spectrum can be traded to those who can make the most valuable use of it provided that there is no practical constraint on doing so. If there is a practical constraint on the ability to trade these licences at present it is most likely to relate to the uncertainty over access rights post 2015. However, the act of varying the licences so that they become indefinite would remove this uncertainty. We also note that most of these 28GHz BFWA licences have been traded at some point since their initial award, in some cases more than once. This evidence of an active market in trading these particular spectrum licences suggests to us that the most valuable new uses and licensees will be able to gain access to this spectrum.
- 4.19 Under the auction approach it is likely that the post 2015 spectrum access rights would be acquired in the auction by those that can derive most value from use of the spectrum. This likelihood would be increased by using a combinatorial clock auction design that recognises the complementarity and substitutability between lots as noted above.

- 4.20 The spectrum bands themselves are not available for a new award on a UK wide basis because of the geographic areas that were awarded in 2008 by a subsequent auction. We note that, under either option, there may well be opportunities for trading to enable the rationalisation of services to consumers over wider geographic areas, which could lead to more efficient use of the spectrum overall.
- 4.21 Our provisional view is that both options are compatible with our duty to promote optimal use of spectrum:
- Under the licence variation option, the objective can be satisfied through trading (if necessary) as the evidence of trading to date suggests that there should be no impediment to this;
 - Under an auction option, the efficiency of assignment of spectrum rights from January 2016 can be promoted through effective auction design, and any residual risk of a sub-optimal allocation via the primary award process might be again mitigated through subsequent trading.

Duration of period of uncertainty

- 4.22 We believe that the current uncertainty over access rights post 2015 is acting as an impediment to efficient use of the spectrum. This inefficiency will remain until this uncertainty is resolved⁷, either by variation of the current licences or by auction of the post 2015 spectrum access rights. However, there is likely to be a material difference between the options as regards the timescale for resolution of the uncertainty:
- It would be possible, depending on the responses to this consultation, to vary the licences towards the end of Q1 2013;
 - It is unlikely that an auction for the spectrum could be held until, at the earliest, the first half of 2014 and possibly considerably later, depending on the complexity of the auction design and on the availability of our resources to progress the auction in light of competing priorities.
- 4.23 An auction process would require us to:
- Consult on the form of an auction;
 - Develop auction regulations and consult on these;
 - Develop / adapt auction software;
 - Set a timetable for applications and publish an award timetable;
 - Run bidder familiarisation exercises;
 - Conduct the auction.

⁷ There are two types of uncertainty affecting the spectrum, the first being the issue of whether or not a party has certainty of access to the spectrum post 2015 and the second relating to the price that they have to pay for this access (the annual licence fee in the licence extension option or the one-off price paid under the auction option). It is the issue of whether or not a party has certainty of access to the spectrum post 2015 that is of most relevance to the ability to invest in exploitation of the spectrum in the current context.

- 4.24 In our experience, the minimum time to deliver an auction process, allowing both for the time required for statutory processes and for the practical steps necessary to construct the mechanism and procedures (including bidder familiarisation with the rules and systems involved), is of the order of 9 - 12 months. This assumes that the priority is sufficient to command appropriate resources and that none of the consultation stages identifies issues to be addressed and possibly further consulted on. It also depends on the complexity of the auction design; for example, a combinatorial clock auction would take us significantly longer to design, consult upon and implement than a simpler auction format.
- 4.25 On the above basis, the appropriate incentives to exploit the spectrum effectively, either by the current licensees or by those to whom spectrum could be traded, would be likely to be in place at least a year earlier under the licence variation option than under the auction option (and possibly considerably more than a year earlier).

Proportionality and efficiency of implementation effort and cost

- 4.26 We have also to consider the effective use of limited Ofcom resources and thus the proportionality and efficiency of expending resources as balanced against those activities that might be thereby displaced.
- 4.27 The licence variation option would not require significant Ofcom resource to implement, as it is a relatively simple process.
- 4.28 The auction option would absorb considerably more of Ofcom's resources, with the additional cost running potentially into hundreds of thousands of pounds. It would not seem proportionate or efficient for us to incur this additional cost unless there were reasonable grounds to believe that the auction approach would lead to a materially better outcome in terms of spectrum efficiency.
- 4.29 As discussed above, an award for the spectrum represented by these licences would be for geographically fragmented parts only of the UK wide spectrum bands, with the counterpart geographic areas having been awarded separately in 2008. If, hypothetically, the indicative value of the spectrum comprising these licences was taken from the outturn of the 2008 auction for equivalent spectrum packages, then this might suggest a total value in the region of one hundred thousand pounds (i.e. potentially less than the additional cost of running the auction process itself). Although the 2008 auction may underestimate the current value of this spectrum, the nature of this comparison suggests that we would need to consider carefully whether holding an auction for these particular spectrum packages would represent value for money.

Provisional Conclusion

- 4.30 In light of the above considerations, and subject to stakeholder responses to this consultation, our provisional view is that the licence variation option is likely to be the option that is most consistent with our statutory duties.
- 4.31 The main reason for this provisional conclusion is that the licence variation option would remove the uncertainty over post 2015 spectrum access rights at least a year earlier than the auction approach. Meanwhile, the evidence of an active trading market in this band provides confidence that other parties, aside from the existing licensees, would be able to obtain access to this spectrum if they place a materially higher value on this spectrum than the existing licensees. Moreover, the auction approach would cost considerably more to pursue with, in our view, little additional benefit to justify that extra cost in terms of the optimal use of the spectrum in the longer term.

Section 5

Options for applying fees from 2016

5.1 Under the licence variation option we would set an annual licence fee to apply from January 2016. This section therefore considers briefly the possible reference fee rates that could be derived from the two award processes (2000 and 2008) that are of most direct relevance to these licences, before going on to explain how we would propose to address the task of setting the annual licence fees for 28 GHz licences from 2016.

Reference values from the 2000 auction

5.2 The BFWA licences sold by auction in 2000 are within the three spectrum packages, each of 2 x 112 MHz.

5.3 The prices paid in 2000 for each 15-year licence were:

Sub-band 1

Round	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Round
21	Energis £4,540,000	Norweb £3,000,000	Energis £3,000,000	N/A	N/A	N/A	N/A	N/A	Energis £2,000,000	N/A	N/A	N/A	N/A	Energis £160,000	21

Sub-band 2

Round	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Round
21	Broadnet £4,620,000	Energis £3,000,000	Norweb £3,000,000	N/A	N/A	N/A	N/A	N/A	Norweb £2,000,000	Norweb £1,000,000	N/A	Energis £1,000,000	N/A	Chorus £150,000	21

Sub-band 3

Round	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Round
21	Faultbasic £4,540,000	Faultbasic £3,000,000	Faultbasic £3,000,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Eircom £150,000	21

Total = £38,160,000 for 16 regional packages.

5.4 The selling prices per region for a 15-year period were therefore on the order of:

- £4.5M (London)
- £3M (Birmingham or Manchester/Liverpool)
- £1 – 2M (elsewhere UK mainland, where sold)
- £150k (Northern Ireland)

Reference values from the 2008 auction

5.5 The BFWA licences are all within the same three spectrum packages as were sold, via an auction in 2008 which awarded licences in the 10, 28, 32 and 40 GHz bands, in the areas of the country where this spectrum remained unallocated. Two further national packages of the same size were also sold in adjacent spectrum.

5.6 The prices paid in 2008 were as follows:

- Sub-band 1 (9 regions) for £20,000
- Sub-band 2 (7 regions) for £10,000

- Sub-band 3 (11 regions) for £30,000
- 2 x new packages (2 x 14 regions) for £260,000

Total = £320,000 for 55 regional packages.

5.7 The average price paid per region was therefore on the order of £5,820 for a licence period of 15 years initially, indefinite thereafter subject to annual fee payments.

Setting spectrum fees

- 5.8 There is clearly a significant disparity between the values obtained in the 2000 and 2008 awards and we are now approaching 5 years further on from the latter award. It would not seem appropriate therefore to use either figure directly as a reference value for the potential 28 GHz licence fee rate.
- 5.9 An alternative to these historic auction values would be to set a fee with reference to the current level charged for fixed links in broadly comparable bands. However, there could be a risk that a fee that is set now on this basis might not still be relevant at the time it came into effect in 2016. Also, the calculation methods for individual point-to-point links do not easily translate onto the regional coverage represented by these 28 GHz licences.
- 5.10 We have recently published an Update on our review of the fixed links bands⁸. This Update explains that we plan to carry out a fees review for the fixed link bands in the coming year. This fees review will cover a number of spectrum bands that are broadly comparable to the 28GHz spectrum. It would therefore make practical sense, and promote consistency in charging across different bands, to consider the appropriate fee levels for the extended 28 GHz licences as part of (or in parallel with) the fees review for fixed link bands. This review, and the subsequent adoption of fee levels into fees order regulations, would be subject to public consultation.

⁸ <http://stakeholders.ofcom.org.uk/binaries/consultations/spectrum-review/update.pdf>

Section 6

Provisional Conclusion: Proposal to Vary 28 GHz BFWA Licences

Proposed Way Forward

- 6.1 In light of the above considerations, our provisional conclusion is that we should vary Urban Wimax's and Cable & Wireless' licences in the 28 GHz band, and, similarly on request, to offer to vary any other existing 28 GHz BFWA licence to:
- extend the licence duration indefinitely;
 - apply technical terms of IR2048 for all to align with the 28 GHz Spectrum Access licences;
 - apply, from January 2016, administered incentive pricing per geographic region at a rate yet to be determined but which will be in line with outcome of the current review of pricing in bands shared with fixed links.

Consultation Questions

Q1 Do you agree that Ofcom should grant Urban Wimax's and Cable & Wireless's requests to vary their licences as soon as practicable?

Q2 Do you agree with our proposal to align the technical conditions of the licences with those awarded in 2008 in these and adjacent spectrum bands?

Q3 Do you agree with Ofcom's proposals to set an AIP fee level in context with the review of fees within bands used for fixed links?

Q4 Do you agree that Ofcom should offer this variation to other BFWA licence holders?

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 15 February 2013**.
- A1.2 Ofcom strongly prefers to receive responses using the online web form at <http://stakeholders.ofcom.org.uk/consultations/variation-28ghz>, 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 cliff.mason@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
Spectrum Policy Group
Authorisations Team
Riverside House
2A Southwark Bridge Road
London SE1 9HA
- Fax: 020 7981 3333
- 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, which are listed together at Annex 4. 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, 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/about/account/disclaimer/>

Next steps

- A1.11 Following the end of the consultation period, Ofcom intends to publish a statement in Spring 2013.
- A1.12 Please note that you can register to receive free e-mail Updates alerting you to the publications of relevant Ofcom documents. For more details please see: http://www.ofcom.org.uk/static/subscribe/select_list.htm

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 . 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

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 will 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.
- 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 www.ofcom.org.uk/consult/.
- 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: Variation of 28 GHz Broadband Fixed Wireless Access Licences
 To (Ofcom contact): Cliff Mason, Spectrum Policy Group
 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	<input type="checkbox"/>	Name/contact details/job title	<input type="checkbox"/>
Whole response	<input type="checkbox"/>	Organisation	<input type="checkbox"/>
Part of the response	<input type="checkbox"/>	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

Consultation questions

Q1 Do you agree that Ofcom should grant Urban Wimax's and Cable & Wireless's requests to vary their licences as soon as practicable?

Q2 Do you agree with our proposal to align the technical conditions of the licences with those awarded in 2008 in these and adjacent spectrum bands?

Q3 Do you agree with Ofcom's proposals to set an AIP fee level in context with the review of fees within bands used for fixed links?

Q4 Do you agree that Ofcom should offer this variation to other BFWA licence holders?