



# Statement on variation of 900 MHz and 1800 MHz Wireless Telegraphy Act licences

Statement

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## Section 1

# Executive summary

- 1.1 Ofcom published a Notice proposing to vary the existing 900 MHz and 1800 MHz licences to allow UMTS use on 28 October 2010. Ofcom is required to vary the licences in this way as a result of a direction to Ofcom made by the Secretary of State (the Government Direction).
- 1.2 The Government Direction was made on 20 December 2010 and came into force on 30 December 2010.
- 1.3 Ofcom has considered all the responses to its Notice. It has decided to vary the licences in line with its proposal in the Notice subject to some minor changes to the drafting of the licences, which are explained below.

## Section 2

# Introduction

## Notice of the proposed licence variations

- 2.1 The Secretary of State has directed Ofcom in relation to a number of matters relating to mobile spectrum. A draft direction entitled the Wireless Telegraphy Act 2006 (Directions to OFCOM) Order 2010 (the Government Direction) was laid before Parliament on 27 July 2010.
- 2.2 Both Houses of Parliament approved the draft Government Direction and it was made by the Secretary of State on 20 December 2010 and came into force on 30 December 2010.
- 2.3 On 26 October 2010 the Government wrote to Ofcom stating that it considered that it would be entirely appropriate for Ofcom to consult on the changes proposed to be made to the 900MHz and 1800MHz licences to implement the draft Government Direction in parallel with Parliament's consideration of the draft Direction. Ofcom published on 28 October 2010 a consultation entitled 'Notice of proposed variation of 900 MHz and 1800 MHz Wireless Telegraphy Act licences'<sup>1</sup> (the Notice) setting out our proposed changes to the licences.
- 2.4 The proposed changes addressed a number of provisions of the Government Direction that concern the 900 MHz and 1800 MHz spectrum. These are the provisions that require Ofcom to:
- vary the licences for 900 MHz and 1800 MHz spectrum to permit use of the licensed frequencies for both GSM and UMTS;
  - ensure compliance with technical parameters in the Annex to the RSC Decision 2009/766/EC;
  - vary the licences for 900 MHz and 1800 MHz spectrum to extend the period of notice for revocation for spectrum management reasons from 1 year to 5 years; and
  - make the relevant licences tradable. In this regard Ofcom proposes to include a provision in the licences to note that subject to appropriate provision being made in the relevant trading regulations<sup>2</sup> (the Trading Regulations), the licences will be tradable. We will separately consult on the necessary changes to the Trading Regulations.
- 2.5 We therefore asked interested parties to consider the following question when responding to the Notice.

*Do you have any comments on the proposed changes to the licences for 900 MHz and 1800 MHz spectrum?*

<sup>1</sup> <http://stakeholders.ofcom.org.uk/binaries/consultations/900-1800mhz-wireless-telegraphy/summary/main.pdf>

<sup>2</sup> See the Wireless Telegraphy Act (Spectrum Trading) Regulations 2004, as amended.

## Responses

- 2.6 We received twelve responses to the Notice. Three responses were submitted on a confidential basis. The other nine responses are published on the Ofcom website<sup>3</sup>.

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<sup>3</sup> <http://stakeholders.ofcom.org.uk/consultations/900-1800mhz-wireless-telegraphy/?showResponses=true>

## Section 3

# Assessment of the responses to the Notice

- 3.1 In this section we review the responses we received to our Notice and set out our response in each case.

## Possible interference issues

- 3.2 Two potential interference risks were raised by respondents if the licences for 900 MHz and 1800 MHz were varied to allow UMTS use.

### **Risk of interference into licences for 1781.7-1785 MHz/1876.7-1880 MHz (GSM/ DECT guard bands)**

- 3.3 The FCS (on behalf of the DECT guard band licensees who form the Mobile 200 group) expressed concern that introducing UMTS elsewhere in the 1800 MHz band could create a potential for interference into the GSM 1800 guard band spectrum.
- 3.4 In this regard, we note that work in CEPT (see report ECC Report 82 (<http://www.erodocdb.dk/Docs/do98/official/Word/ECCREP082.DOC>) considered the risk of interference between neighbouring GSM and UMTS systems and concluded that a 2.8MHz carrier separation was required to manage this risk. As a result, a 2.8MHz carrier separation was included in the annex to RSC Decision 2009/766/EC on the harmonisation of the 900MHz and 1800MHz frequency bands, which Member States are required to apply. Our proposed change to the licences implements this requirement.

### **Risk of interference into GSM-R**

- 3.5 Network Rail and the Office of Rail Regulation expressed concern that Ofcom's proposals could impact upon the Railway Communications Project (which uses GSM-R technology).
- 3.6 A confidential response expressed the view that any co-ordination procedure that is required between UMTS and GSM-R operators should be resolved quickly.
- 3.7 Ofcom acknowledges that use of some of the 900 MHz spectrum for UMTS may cause interference into neighbouring GSM-R systems. Given those systems are to some degree safety critical, Ofcom will take appropriate measures to mitigate the risk that such interference occurs. As a temporary measure we are putting in place a set of co-ordination requirements which must be followed before UMTS900 base stations may be deployed. We will continue to study this issue in conjunction with the operators and Network Rail with the intention of developing a long term solution.

## Marine use

- 3.8 Marine Mobile Systems suggested that the current base station power levels be retained at their current GSM (2G) level on coastal sites, or at least on the sectors of those sites that face seaward. They considered that there could otherwise be loss of

range for the coastal yachtsman and commercial users as 2G systems are gradually phased out.

- 3.9 Ofcom would like to clarify that under the proposals set out in the Notice the proposed power level for UMTS is effectively the same (from a user's perspective) as is the case for GSM. As a result, we consider that the concern raised by Marine Mobile Systems does not arise.

### **Technology neutrality**

- 3.10 A number of respondents (Huawei, Intellect and Samsung) suggested that Ofcom should consider making the licences fully technology neutral.
- 3.11 Ofcom does intend to liberalise the 900 MHz and 1800 MHz spectrum for other systems such as LTE and WiMAX when the European work on defining appropriate technical conditions has completed. We envisage that these changes will be made in the course of 2011.

### **Additional spectrum for low power shared use**

- 3.12 The FCS (on behalf of the GSM1800 MHz guard band licensees who form the Mobile 200 group) and Cable & Wireless Worldwide raised a concern that while the existing licences for 1781.7-1785 MHz/1876.7-1880 MHz are technology neutral, it is not possible to deploy UMTS in that spectrum as UMTS requires a 5 MHz carrier. Accordingly they suggested that Ofcom should make available additional low power spectrum.
- 3.13 Ofcom's Notice implements the requirements set out in the Government Direction to liberalise the 900 MHz and 1800 MHz spectrum for UMTS. As noted above the former DECT guard band frequencies are already licensed on a technology neutral basis. There are a number of future spectrum awards in which it may be possible to acquire additional spectrum for low power use.

### **Spectrum trading**

- 3.14 Everything Everywhere suggested that the licences should be made tradable at the same time as the variations proposed in the Notice were made.
- 3.15 The Government Direction gives a number of directions to Ofcom. One of these (paragraph 7) relates to amending the Wireless Telegraphy (Spectrum Trading) Regulations 2004 (SI 2004/3154 as amended by SI 2006/339, SI 2006/1807, SI 2007/380, SI 2007/3387, SI 2008/688, SI 2008/2105 and SI 2008/3192) in order to make licences for frequencies in a number of bands tradable.
- 3.16 Ofcom is currently preparing a consultation document in respect of implementing this element of the Government Direction and plans to publish this early in 2011.

### **Competition issues**

- 3.17 Everything Everywhere raised a concern that Ofcom's advice to the Government in relation to the liberalisation of the 900 MHz and 1800 MHz spectrum had not been subject to a public consultation, and did not constitute a proper competition assessment for the purposes of the amended GSM Directive.



- 3.18 A confidential response was concerned that liberalising spectrum in the hands of the existing licensees will distort competition and that UMTS900 spectrum has an underlying advantage for indoor and rural 3G coverage.
- 3.19 The Secretary of State has directed Ofcom to vary the licences for 900 MHz and 1800 MHz in the hands of the existing licensees. The Government has received advice from Ofcom in relation to the competition position relating to the variation of licences to use these bands. The Government has explained that it has undertaken the competition assessment in relation to 900 MHz spectrum that is required by the amended GSM Directive.<sup>4</sup> Ofcom does not consider that it is required to carry out and consult on a separate competition assessment before varying the 900MHz and 1800MHz licences as required by the Government Direction.

### **Annual licence fees**

- 3.20 Everything Everywhere asked that Ofcom indicate as soon as possible when it will review the annual licence fees for the 900 MHz spectrum. A confidential response suggested that licence fees reflecting full market value should be payable in respect of the UMTS900 and UMTS1800 spectrum from the date of liberalisation.
- 3.21 The Government Direction (at paragraph 6(1)) requires Ofcom to revise the licence fees for 900 MHz and 1800 MHz licences after completion of the auction for the 800MHz and 2600MHz bands, to reflect the full market value of the frequencies in the 900MHz and 1800MHz bands. Ofcom will therefore revise the licence fees for the 900 MHz and 1800 MHz licences after the completion of that auction.
- 3.22 Whilst it is open to Ofcom to review and if appropriate revise WT Act licence fees at any time, in light of the requirement on Ofcom to revise the licence fees applying to 900MHz and 1800MHz licences after completion of the auction, which is currently expected to happen in the first half of 2012, Ofcom does not consider that it would be a good use of its limited resources to undertake a prior review in the interim. Any such prior review would necessarily have to be based on limited existing information, which will very likely be superseded in the near future by the much better information that is likely to be revealed through the auction. And given the length of time that would be necessary to undertake such a review, including full consultation, any revised fees would in any case probably only apply for a few months before licence fees would have to be revised again in line with the requirements of the Government Direction.
- 3.23 In any case existing licence holders already know that they will have to pay annual licence fees that reflect full market value in the near future, and should take this into account when making decisions in the interim; not varying licence fees in the interim is therefore unlikely to have a significant impact on efficiency. And if the Government's competition assessment had revealed a material competition concern arising from the relative timing of liberalisation and revision of licence fees, it was entirely open to them to direct Ofcom to revise licence fees earlier, but they did not.

### **Forthcoming auction of 800 MHz and 2.6 GHz spectrum**

- 3.24 A confidential response considered that Ofcom should ensure that the design of the forthcoming auction of 800 MHz and 2.6 GHz spectrum should effectively promote

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<sup>4</sup> See for example letter from Ed Vaizey (Minister for Culture, Communications and Creative Industries) to Adrian Bailey MP (Business Innovation and Skills Committee) 27 July 2010.

competition and that 2G liberalisation should be conditional on assurances being made in regard to this.

- 3.25 In its advice to the Government on the consumer and competition issues relating to liberalisation of 900MHz and 1800MHz spectrum for UMTS of 25 October 2010, Ofcom explained that it was confident that it will be possible to design the auction and/or take other steps so as to effectively promote competition through the award of the 800 MHz spectrum. This remains our position.

## Licence conditions

### Definition of e.i.r.p

- 3.26 A confidential response noted that in the licence template in Annex 5 there was an inconsistency between the definition of e.i.r.p. and the definition of GSM and UMTS. The respondent considered that this leads to an ambiguity, in that e.i.r.p. could be interpreted as applying to the whole network and not an individual base station. It suggested that this is a consequence of the draft licence using the definitions from the Commission Decision for the 900 MHz and 1800 MHz band (2009/766/EC). However, the definitions in the Commission Decision are for 'GSM system' and 'UMTS system', whereas in the draft licence they are for 'GSM' and 'UMTS'. It further suggested that this ambiguity could be removed by making the following amendments:

(h) "GSM system" means an electronic communications network that complies with GSM standards, as published by ETSI, in particular EN 301 502 and EN 301 511, and "GSM" means pertaining to such a network or its Radio Equipment.

(j) "UMTS system" means an electronic communications network that complies with the UMTS standards as published by ETSI, in particular EN 301 908-2, EN 301 908-3 and EN 301 908-11, and "UMTS" means pertaining to such a network or its Radio Equipment.

- 3.27 Ofcom agrees with the above suggestions and has amended the licences accordingly.

### Definition of User Station

- 3.28 A confidential response suggested that the wording of the existing licence could be interpreted as excluding communication with 'machine-to-machine' (M2M) terminals, unless the location of the terminal is known. It suggested that this revision of the licences was an opportunity to update the wording to reflect current developments in M2M communications. It noted that the definition of user station in Section 10 of the licence schedule contains two elements, namely (i) "any vehicle mounted or hands portable mobile station designed for mobile use" and (ii) "any static fixed station designed or adapted to be established and used from static locations".

- 3.29 This confidential response noted that the term "fixed station" used in the second element is not defined in the licence, or in the WT Act. It is however, defined in the ITU Radio Regulations (which are referenced for definitions in the previous paragraph of the licence) as "a station in the fixed service", and the fixed service is defined as "a radio communication service between specified fixed points". This is generally taken to mean that the points are known to the licence-holder. It suggested that this perceived ambiguity could be resolved as follows by deleting the words "static fixed" from the definition as the word static is repeated later in the definition:

“User Station” means any vehicle mounted or hands portable mobile station designed for mobile use and/or any ~~static fixed~~ station designed or adapted to be established and used from static locations which meet the appropriate technical performance requirements as set out in the Wireless Telegraphy (Exemption) regulations and either complies with the appropriate Interface Regulation listed in paragraph 3, or for equipment placed on the market before 8 April 2000, is type Approved in accordance with a recognised technical standard relating to the service licensed”.

3.30 Ofcom agrees with the above suggestion and has amended the licences accordingly.

### **RF carrier spacing at the edges of the 900 MHz and 1800 MHz bands**

3.31 A confidential response noted that in the licence schedule, the definition of RF carrier spacing for UMTS is only defined for cases where the neighbouring licensee has deployed GSM, GSM-R or UMTS. This would not be the case at the 960 MHz, 1805 MHz or 1880 MHz boundaries. The response suggested that this could be corrected by reversing the order of the two bullets and modifying the wording of one of them, as follows:

#### RF Carrier Spacing

7. In the absence of bilateral or multilateral agreements which have been notified to Ofcom specifying alternative arrangements between the licensee and the licensee(s) of neighbouring networks the licensee must ensure that in respect of the frequencies set out at paragraph 6 of this schedule:

- the centre frequency of any of their GSM carriers is 100 kHz or more inside any edge of their permitted frequency bands; and
- ~~the centre frequency of any of their UMTS carriers is 2.5 MHz or more inside of any edge of their permitted frequency bands where a neighbouring licensee has deployed a UMTS carrier or carriers in the immediately adjacent spectrum; and~~
- the centre frequency of any of their UMTS carriers is 2.7 MHz or more inside any edge of their permitted frequency bands where a neighbouring licensee has deployed a GSM carrier or carriers (including GSM-R) in the immediately adjacent spectrum; and
- the centre frequency of any of their UMTS carriers is 2.5 MHz or more inside any other edge of their permitted frequency bands.

3.32 Ofcom agrees with the above suggestions and has amended the licences accordingly.

### **Records of radio equipment**

3.33 In respect of paragraph 4 of the licence schedule, a confidential response noted that repeaters are now being installed on trains. It is clearly not possible to provide a postal address or national grid reference for these devices. However, these devices may not comply with all of the technical conditions for a “smart/intelligent low power repeater”, for example they may be shared by operators. The response therefore suggested that records of radio equipment installed on vehicles should not require a

postal address or national grid reference. In the licence schedule it was therefore suggested that a new paragraph be inserted after paragraph 4 as follows:

(c) In respect of Radio equipment installed on vehicles, the conditions relating to the keeping of records contained in sub-paragraphs 4(a)(i)(a) and 4(a)(i)(b) shall not apply.

- 3.34 Ofcom has considered the above suggestion but is of the view that it falls outside the scope of the consultation and instead constitutes a separate request for a licence variation. Accordingly, Ofcom will contact the licensee to take this matter forward separately.

### **Licence schedule paragraph 3(c)**

- 3.35 Everything Everywhere commented that in paragraph 3(c) of the licence schedule the text "five year's" should be "five years". Ofcom agrees with this comment and has amended the licences accordingly.

### **Licence headings**

- 3.36 Everything Everywhere suggested that the licence category text of '2G cellular operator' should be revised. To clarify Ofcom is replacing this with the text 'Public Wireless Network'. Everything Everywhere suggested that this might be misleading given that each operator also holds a 2.1 GHz licence. The term 'Public Wireless Network' is a category used by Ofcom in other secondary legislation, for example, the Wireless Telegraphy (Licence Charges) Regulations. In view of this Ofcom therefore does not intend to change the name of this category.

## Section 4

# Next steps

- 4.1 Ofcom has varied the licences in accordance with the Notice, incorporating the changes detailed in section 3 of this document, with immediate effect.