



Notice of proposed variation of  
2100 MHz Third Generation  
Mobile Wireless Telegraphy Act  
Licences

Consultation

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## Section 1

# Executive summary

- 1.1 This document sets out changes Ofcom proposes to make, subject to the consent of each licensee, to the existing Third Generation Mobile licences ('3G licences').
- 1.2 The proposed changes are to implement certain provisions of the Government Direction<sup>1</sup> which was made on 20 December 2010 and came into force ten days thereafter . Subject to responses to this notice and the individual consent of the relevant licensees, Ofcom intends to vary the licences in line with these proposed changes as soon as possible.
- 1.3 The main changes required by the Direction are to provide for:
  - a new coverage obligation;
  - a change to licence duration;
  - a revocation notice period of 5 years (such revocation not to be capable of taking effect before the period for which the licences were auctioned expires);
  - a provision for Ofcom to charge annual licence fees from the end of 2021 (when the period for which the licences were auctioned expires); and
  - a provision relating to spectrum trading.
- 1.4 In addition, we intend to take this opportunity to make a number of minor editorial changes to update the licences to take account of updates in the relevant underlying primary legislation since the licences were last varied.

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<sup>1</sup> The Wireless Telegraphy Act 2006 (Directions to OFCOM) Order 2010 ([S.I. 2010 No. 3024](http://www.legislation.gov.uk/ukSI/2010/3024/contents/made)) which can be found at: <http://www.legislation.gov.uk/ukSI/2010/3024/contents/made>

## Section 2

# Introduction

- 2.1 The Government has directed Ofcom in relation to a number of matters relating to mobile spectrum. The Wireless Telegraphy Act 2006 (Directions to OFCOM) Order 2010 (the Direction), was made on 20 December 2010, and came into force ten days thereafter.
- 2.2 The Direction includes provisions requiring Ofcom to vary the existing 2100 MHz 3G licences, providing the respective licensees consent, to include a revised coverage obligation, a new licence duration, a provision to enable Ofcom to charge annual licence fees from 31 December 2021, and a provision relating to spectrum trading.
- 2.3 This document sets out for comment Ofcom's proposed changes to the licences necessary to implement the Direction. Subject to responses to this notice and licensee consent, Ofcom intends to vary the licences in line with these proposed changes as soon as possible. For the avoidance of doubt, a decision by any individual licensee not to consent to the variation of its licence will not affect variation of other licences, if other licensees do consent to their licences being varied.
- 2.4 The proposed changes address a number of provisions of the Direction that concern the 3G licences. These are the provisions, subject to licensee consent, to ensure that:
- by 30th June 2013 the licensee must provide an electronic communications network that is capable of providing mobile telecommunications services to an area within which at least 90% of the population of the United Kingdom lives and with a 90% probability that users in outdoor locations within that area can receive the service with a sustained downlink speed of not less than 768kbps in a lightly loaded cell;
  - the licence will continue in force unless or until revoked by OFCOM;
  - OFCOM may revoke the licence either:
    - (i) for spectrum management reasons on not less than 5 years' notice, such notice not to be given before 31st December 2016, or
    - (ii) in accordance with their powers under the Wireless Telegraphy Act 2006; and
  - that the licensee is to pay an annual charge for the licence that reflects the full market value of the frequencies in the 2100MHz band in respect of periods following 31 December 2021.
- 2.5 The following section describes the proposed changes and actions. The proposed draft textual variations to the licences are set out in Annex 5.

## Section 3

# Proposed licence variations

3.1 This section explains the proposed changes to the licence(s) and our basis for making them.

## Proposed Changes

3.2 We have sought to make the minimum number of changes to the licences necessary to implement the relevant provisions of the Direction.

3.3 In addition, we also intend to take this opportunity to make a number of minor editorial changes to update the licences to take account of updates in the relevant underlying primary legislation since the licences were last varied e.g. replacing references to the 1949 and 1998 Wireless Telegraphy Acts with the 2006 Wireless Telegraphy Act (and the relevant sections therein).

3.4 We propose to make the following changes:

- In both the licence and schedule header text, editorial changes will be necessary to reflect the change of issue date and version number that will be required upon re-issue of the licence.
- In the licence preamble, licence and schedule conditions editorial amendments have been made to the reference to “The Secretary Of State”. This has been replaced by “The Office of Communications (Ofcom)” to reflect that Ofcom is now the relevant licensing authority.
- In the licence preamble an annual fee payment date has been added to reflect that the licences will be subject to an annual licence fee from 1 January 2022 as required by Article 5(3)(d) of the Direction;
- In Section 2 of the licence: “*Licence Term*” – The text has been amended to permit the licence to continue in force beyond 31 December 2021 in accordance with Article 5(3)(b) of the Direction and “until revoked by Ofcom” has been inserted accordingly ;
- In Section 3 (and its sub sections) of the licence: “*Licence Variation and Revocation*” – the text has been updated to reflect the current legislation and:
  - The original Section 3(a) of the licence has been deleted as reference to the Telecommunications Act 1984 is now redundant;
  - A new Section 3(a) has been inserted to provide for revocation in the event that the licensee fails to pay any annual licence fee post 31 December 2021 as prescribed in the new “Fees” section (7);
  - Section 3(b) has been amended to update the reference to the appropriate provision of the Wireless Telegraphy Act 2006;

- A new Section 3(c) has been inserted to provide for revocation on five (5) years' notice after 31 December 2016, in accordance with Article 5(3)(c) of the Direction;
- Section 3(d) has been deleted as the requirement in that provision is now redundant;
- A new Section 3(d) has been inserted. This additional text has been inserted to reflect that the licences will be tradable (once trading regulations have been made in accordance with section 30 of the Wireless Telegraphy Act 2006) as required by Article 7 of the Direction;
- Section 3(2) has been updated to reflect the current legislation and the revised sub-section numbering in Section 3;
- A new Section 3(3) has been included to provide for the circumstances in which Ofcom may vary the licence after 31 December 2021;
- Section 3(4) (originally 3(3)) has been deleted as it is now provided for in the preceding sub-paragraphs of section 3;
- In Section 4 of the licence: "*Changes*" – additional text has been inserted to reflect that the licences will be tradable (following amendment of the Trading Regulations) as required by Article 7 of the Direction. Amending Section 4 in this way does not make the licences tradable. The licences will only become tradable once trading regulations have been made in accordance with section 30 of the Wireless Telegraphy Act 2006, which will be subject to a separate consultation;
- In Section 6 an editorial change has been made to identify the relevant "Regulations" referenced, namely the Wireless Telegraphy (Third Generation Licences) Regulations 1999;
- A new Section 7: "*Fees*" - has been inserted. This has been added to reflect that the licences will be subject to an annual licence fee from 31 December 2021 as required by Article 5(3)(d) of the Direction;
- A new Section 10: "*Penalty*" - has been inserted. This has been added to reflect Ofcom's powers to impose penalties under section 43A of the Wireless Telegraphy Act 2006. Section 43A of that act applies to contraventions of licence provisions where those provisions have been included because it appears to Ofcom that a direction under section 5 of the Wireless Telegraphy Act 2006 requires the provision to be included in the licence. In this case, the Direction requires Ofcom to include a coverage obligation in the licences. These penalties provisions will apply only in respect of that coverage obligation, which is set out in section 4 of the schedule to the licences;
- In Section 14 (originally section 11): "*Modification, Restriction and Closedown*" – the process by which Ofcom would notify licensees on the restriction or shut down of the radio equipment in the event of a national or local state of emergency being declared has been amended. A general notice applicable to the class of licensee will now be issued rather than notification through the London, Edinburgh and Belfast Gazettes;

- In Section 17 (originally Section 13) of the licence: “*Interpretation*” - the reference to “undue interference” has been amended to reflect the definition of “interference” in the Wireless Telegraphy Act 2006;
- At the end of the licence, the reference to “Radiocommunications Agency, the Secretary of State and Public Wireless Networks” has been deleted and replaced by Ofcom.
- In Section 3 of the licence schedule: “*Approved Standards for the Radio Equipment*” – this text has been updated to reflect the current radio equipment conformance process;
- In Section 4 of the licence schedule: *Special Conditions relating to the Operation of the Radio Equipment* – a new coverage obligation has been included at 4(b) in accordance with Article 5(3)(a) of the Direction;
- A new Section 4(d) has been inserted to cover the use of femtocells and ‘smart/intelligent low power repeaters’ as permission to use this equipment has already been given to individual operators;
- In Section 4(g) (originally 4(e)) an editorial change has been made to amend “registered users” to “subscribing customers” so that the terminology is consistent with that used in the 900 MHz and 1800 MHz Wireless Telegraphy Act licences;
- Section 5 of the licence schedule: “*Site Clearance*” - has been deleted. This requirement became redundant in August 2007. Details can be found on Ofcom’s website at: <http://stakeholders.ofcom.org.uk/spectrum/spectrum-management/radio-site-clearance/>
- Section 7 (originally section 6) of the licence schedule: “*Maximum Permissible EIRP*” - has been amended to reflect the new power level of 65dBm as detailed in the Ofcom decision: “Application for a variation to 3G licences (and consequent proposal to vary draft 2GHz MSS/CGC Base station licences) “<sup>2</sup>;
- Section 11 (originally section 12) of the licence schedule: “*Interpretation*” – has been editorially updated with additional references to “dBm”, “femtocells”, “smart/intelligent low power repeaters” and user stations.

3.5 No other proposed amendments have been made to the licence or schedule text, other than the renumbering and referencing of paragraphs as necessary. The remaining text remains in its original form as on issue to the MNOs.

3.6 A revised version of the licence including the proposed changes can be found in Annex 5.

### **Associated issues related to varying the licences.**

3.7 We consider that these variations do not necessitate the amending of the associated regulatory instruments:

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<sup>2</sup> <http://stakeholders.ofcom.org.uk/binaries/consultations/3Glicences/statement/statement.pdf>

- the Wireless Telegraphy (Exemption and Amendment) Regulations 2010<sup>3</sup>;
- the UK frequency allocation table<sup>4</sup>; and
- the UK plan for frequency allocation<sup>5</sup>.

## Wireless Telegraphy Act Exemption Regulations

3.8 We do not consider that the current Wireless Telegraphy (Exemption and Amendment) Regulations 2010, which came into force on 1 November 2010, require amendment as they already cover the use of UMTS 2100 MHz user equipment (handsets / mobile devices etc). The proposed licence variations set out above do not affect this.

## UK Frequency Allocation Table

3.9 The United Kingdom Frequency Allocation Table is issued by the National Frequency Planning Group on behalf of the Cabinet Office Committee on UK Spectrum Strategy and includes the International Telecommunication Union Table of Frequency allocations contained in the current Radio Regulations. The United Kingdom Frequency Allocation Table covers the radio spectrum from 9 kHz to 275 GHz.

3.10 The current (2010) version of the United Kingdom Frequency Allocation Table (Issue 16) shows the frequency bands 1900 - 1980 MHz and 2110 – 2120 and 2120 – 2170 MHz as being allocated to 'MOBILE' services. Ofcom is satisfied that the above allocations require no amendment as a result of the proposed licence variations set out above.

## UK Plan for Frequency Authorisation

3.11 The UK Plan for Frequency Authorisation (UKPFA) provides contextual information on different types of spectrum authorisations and licences, with links to further information. Ofcom considers that the descriptions currently used for the 2100 MHz (3G) licences are sufficient and do not require amending as a result of the proposed licence variations set out above.

## Consultation questions

*Do you have any comments on the proposed variations which Ofcom intends to make to the 3G licences in order to implement the Direction?*

*Do you consent to your 3G licence being varied as proposed?*

<sup>3</sup> <http://www.legislation.gov.uk/ukxi/2010/2512/made/data.pdf>

<sup>4</sup> <http://stakeholders.ofcom.org.uk/spectrum/spectrum-management/UK-FAT-Table-2010/>

<sup>5</sup> <http://spectruminfo.ofcom.org.uk/spectrumInfo/ukpfa>



## Section 4

# Coverage obligation verification

## Introduction

- 4.1 The Direction requires Ofcom to revise the coverage obligation specified in the current 3G licences. The key requirements of the revised obligation are that by 20 June 2013, the licensee must provide an electronic communications network:
- that is capable of providing mobile telecommunications services to an areas within which at least 90% of the population of the UK lives (this represent an increase from the existing 80% population coverage obligation in the current licences); and
  - with a 90% probability that users in outdoor locations within that area can receive the service with a sustained downlink speed of not less than 768 kbps in a lightly loaded cell.
- 4.2 For the purposes of this notice, we interpret 'lightly loaded cell' as follows:
- a 'lightly loaded cell' has a single user demanding service with a sustained downlink speed of not less than 768 kbps and the the surrounding cells of the network are loaded to a low level (e.g. transmitting at 20% of their maximum power).
- 4.3 Below we summarise our proposed approach to monitor and verify compliance with the revised obligation.

## Summary of proposed approach

- 4.4 Conceptually, our approach to assessing compliance with the previous coverage obligation was to:
- identify the minimum power that a UMTS receiver needs in order for it to successful receive the primary pilot channel (CPICH) from the base station;
  - obtain detailed site data (e.g. location, power, antenna details for each site) from each operator;
  - use a 3G planning tool to calculate, for every pixel in the country (based on a 50 metre x 50 metre square grid), whether a receiver located at that pixel would receive a CPICH power at or above the minimum;
  - compare these pixels with population data from the UK 2001 census and count the population as covered if it falls in a pixel with a CPICH power at or above the minimum.
- 4.5 The same approach will not work for the revised obligation, primarily because it cannot estimate whether a terminal located at any specific point can receive the minimum downlink speed.
- 4.6 In order to assess whether a terminal located at any specific location can receive the minimum downlink speed, we consider that the following condition needs to be met:

- the signal to noise plus interference ratio (SINR) of the relevant data channel (i.e. the high speed downlink shared channel (HS-DSCH) for HSDPA systems) needs to be above a certain threshold (the SINR condition). We set out below how that threshold is to be calculated.
- 4.7 It could be argued that a second condition related to the the quality (measured as  $E_c/I_0$ ) of the primary pilot channel (CPICH) would also be needed. However, it is very unlikely that such a condition would not be met in circumstances where the SINR condition would. Therefore we do not consider that a separate test for the  $E_c/I_0$  condition is required.
- 4.8 Our proposed approach in relation to the SINR condition is to calculate the SINR(HS-DSCH) for a hypothetical test terminal located at the population weighted centroid of each UK census output area taking into account signals from all base sites within a certain distance (i.e. up to 15 km) of the centroid location, up to a maximum of the 20 closest sites.

### Overview of the proposed calculation method

- 4.9 For each operator the calculation could proceed along the following lines:
- the operator supplies data for each 2.1 GHz 3G site in its network. This data could include all or some of the following - supplemented (for certain, non critical, parameters) by default values if necessary:
    - location (6 figure NGR);
    - height above ground level (metres);
    - number of sectors;
    - for each sector;
      - boresight direction (degrees east of north);
      - boresight gain (dBi);
      - horizontal 3 dB beamwidth (degrees);
      - vertical 3 dB beamwidth (degrees);
      - combined mechanical and electrical downtilt (degrees);
      - maximum transmit power (into antenna) or EIRP (dBm);
    - the technical capability of each site (e.g HSPA (5, 10 or 15 codes), HSPA+, MIMO capability etc);
  - for each UK census output area:
    - the dominant clutter class is established using Ofcom's existing clutter database;
    - the nearest 20 base stations within a radius of 15 km to the output area population weighted centroid location are identified: if the number

of base stations identified is less than 5, the radius is expanded until the number identified equals 5;

- for each sector of the nearest base stations identified in the previous step, the downlink power that would be received by a terminal 1.5 metres above ground level at the centroid location is calculated using an appropriate propagation model (e.g. Extended Hata) – including a margin for shadow fading at 90% location probability and taking into account the antenna radiation patterns of each sector;
  - the base station sector providing the highest received power is designated as the serving sector and the SINR(HS-DSCH) is calculated assuming 0.5 shadow fading x-correlation between the serving and non-serving sites. Non-serving sectors are assumed to be transmitting at 20% of their maximum power (i.e. they are lightly loaded);
  - using an appropriate SINR to throughput function (from published sources – e.g. HSPA for UMTS by Holma Toskala or 3GPP documents) the single user throughput is calculated (taking account of the technical capability of the serving site) and if greater than 768kbps the output area is deemed to be served;
- the population in each served output area is summed and the total is the UK population served. If that total meets or exceeds 90% of the UK population, the licence condition will be met.

### Next steps

- 4.10 It is our intention to set out in more detail the process to monitor and measure compliance with the obligation. We expect to publish this guidance in Q2 2011. We will ensure that licensees have an opportunity to comment on this guidance before it is finalised.

### Consultation question

*Do you have any comments on the proposed process to monitor and measure compliance with the coverage obligation requirement?*

## Section 5

# Next steps

- 5.1 Following the publication of this Notice, any interested parties may make representations to us in relation to our proposals relating to the variation of the 3G licences. As set out in Annex 1, any such representations should be made by **5pm on 17 March 2011**.
- 5.2 Existing licensees should write to Ofcom indicating whether or not they consent to having their 2100 MHz 3G licences varied in accordance with the proposals set out in this notice.
- 5.3 Subject to the responses we receive we intend to vary the licences as soon as possible, subject to consent being given by the respective licensees.

## 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 17 March 2011**.
- A1.2 Ofcom strongly prefers to receive responses using the online web form at <http://stakeholders.ofcom.org.uk/consultations/consultations/2100-MHz-Third-Generation-Mobile/>, 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 [3g.variation@ofcom.org.uk](mailto:3g.variation@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.
- Ofcom  
Mobile & Auctions Team  
3<sup>rd</sup> Floor  
Riverside House  
2A Southwark Bridge Road  
London SE1 9HA
- Fax: 020 7981 3990
- 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 Robert Emson on 020 7783 4375.

## 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/about/accoun/disclaimer/>

## Next steps

- A1.11 Following the end of the consultation period, Ofcom intends to publish a statement as soon as possible.
- 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/static/subscribe/select\\_list.htm](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](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 Vicki Nash, Director Scotland, who is Ofcom's consultation champion:

Vicki Nash  
Ofcom  
Sutherland House  
149 St. Vincent Street  
Glasgow G2 5NW

Tel: 0141 229 7401  
Fax: 0141 229 7433

Email [vicki.nash@ofcom.org.uk](mailto:vicki.nash@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](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 [www.ofcom.org.uk/consult/](http://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:

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

# Consultation question

*Do you have any comments on the proposed variations which Ofcom intends to make to the 3G licences in order to implement the Direction?*

*Do you consent to your 3G licence being varied as proposed?*

*Do you have any comments on the proposed process to monitor and measure compliance with the coverage obligation requirement?*

**Annex 5**

# Licence template

~~Office of Communications (Ofcom) Radiocommunications Agency~~  
Wireless Telegraphy Act ~~2006s 1949 and 1998~~

### **THIRD GENERATION MOBILE LICENCE**

This Licence replaces the licence issued by ~~Ofcom~~~~the Secretary of State~~ on [DATE] to [COMPANY NAME].

Licence no: **XXXXXX**

Date of issue: **[DATE]**

**Fee payment date** **1 January (annually)**  
**(from 1 January 2022)**

1. This Licence authorises **[COMPANY NAME]**  
("The Licensee")  
of **XXXX**  
**XXXX**  
**XXXX**  
**XXXX**

to establish, install and use radio transmitting and receiving stations and/or radio apparatus as described in Schedule 1 of this Licence (hereinafter together called "the Radio Equipment") subject to the terms set out below.

#### **Licence Term**

~~2.~~ This Licence shall continue in force until ~~revoked by Ofcom 31 December 2021~~  
~~unless earlier revoked by~~

~~2.~~ ~~the Secretary of State in accordance with paragraph 3 of this Licence~~ or surrendered by the Licensee.

#### **Licence Variation and Revocation**

3. (1) Pursuant to ~~Schedule 1(8) of the Wireless Telegraphy Act 2006 ("the 2006 Act"), Ofcom section 4 of the Wireless Telegraphy Act 1998 (the "1998 Act"), the Secretary of State~~ may not revoke this Licence under ~~Schedule 1(6) of the 2006 Act section 1(4) of the Wireless Telegraphy Act 1949 (the "1949 Act")~~ save at the request or with the consent of the Licensee except:

- (a) ~~in accordance with clause 7 of this Licence; if there is no longer in force a licence granted to the Licensee under section 7 of the Telecommunications Act 1984;~~

- (b) in accordance with ~~Schedule 1 paragraph 8(5)~~section 4(5) of the ~~2006~~1998 Act;
- (c) ~~for reasons related to the management of the radio spectrum, provided that in such a case the power to revoke may only be exercised after five years notice is given in writing and after Ofcom has considered any pertinent factors (such notice not to be given before the 31 December 2016);if there has been a material breach of any of the terms of this Licence or the schedules(s) hereto;~~
- ~~(d)~~ (d)—~~if, in connection with the transfer or proposed transfer of rights and obligations arising by virtue of the Licence, there has been a breach of any provision of Regulations made by Ofcom under the powers conferred by section 30(1) and (3) of the 2006 Act<sup>1</sup>;if the Licensee is found, to the reasonable satisfaction of the Secretary of State, to have been involved in any act, or omission of any act, constituting a material breach of the rules and procedures as set out in the Wireless Telegraphy (Third Generation Licences) Notice (the “Notice”) issued by the Secretary of State pursuant to regulation 4 of the Wireless Telegraphy (Third Generation Licences) Regulations 1999 (the “Regulations”).~~
- ~~(a)(c)~~ (c) If there has been a material breach of any of the terms of this Licence or the schedules(s) hereto;
- (2) ~~In the period before 31 December 2021, p~~Pursuant to ~~Schedule 1 paragraph 8(1)~~section 4 of the ~~2006~~1998 Act, ~~Ofcom~~the Secretary of State may not vary this Licence under ~~Schedule 1 paragraph 6~~section 1(4) of the ~~2006~~1949-A Act save at the request or with the consent of the Licensee except:
- (a) in the circumstances specified in paragraphs ~~(ba)~~(c) ~~to (cd)~~ and (d) of sub-paragraph (1) of the paragraph; or
- (b) in relation only to paragraphs 7 and 8 of Schedule 1, if ~~Ofcom~~the Secretary of State has reasonable grounds for concluding that use of the Radio Equipment in accordance with either or both of these paragraphs is causing, or is likely to cause, undue interference to other authorised radio equipment.
- (3) ~~After 31 December 2021, Ofcom may only vary this Licence by notification in writing to the Licensee and in accordance with paragraphs 6 and 7 of Schedule 1 of the 2006 Act.For the avoidance of doubt, and without prejudice to sub-paragraphs (1) and (2) above, the Secretary of State may only revoke or vary this Licence in accordance with Section 1E of the 1949 Act.~~

## Changes

4. This Licence may not be transferred. ~~The transfer of rights and obligations arising by virtue of this Licence may however be authorised in accordance with regulations made by Ofcom under powers conferred by section 30 of the 2006 Act<sup>2</sup>.~~

<sup>1</sup> These are regulations on spectrum trading.

<sup>2</sup> See Ofcom’s website for the latest position on spectrum trading and the types of trade which are permitted.

5. The Licensee shall give prior or immediate notice to ~~Ofcom~~~~the Secretary of State~~ in writing of any changes to the details of the Licensee and/or address as recorded in paragraph 1 of this Licence.

6. If the Licence is surrendered or revoked no refund of the fee which was paid by [COMPANY NAME] whether in whole or in part, will be made except at the absolute discretion of the Secretary of State in accordance with regulation 5 of the Wireless Telegraphy (Third Generation Licences) Regulations 1999.

### Fees

7. The Licensee shall each year pay Ofcom the relevant fee as provided in section 12 of the 2006 Act and the regulations made thereunder on or before the fee payment date shown above, or on or before such dates as shall be notified in writing to the Licensee, failing which Ofcom may revoke this Licence.

8. The Licensee shall also pay interest to Ofcom on any amount which is due under the terms of this Licence or provided for in any Regulations made by Ofcom under sections 12 and 13(2) of the 2006 Act from the date such amount falls due until the date of payment, calculated with reference to the Bank of England base rate from time to time. In accordance with section 15 of the 2006 Act any such amount and any such interest is recoverable by Ofcom.

9. If the Licence is surrendered or revoked, no refund, whether in whole or in part of any amount which is due under the terms of this Licence or provided for in any Regulations made by Ofcom under sections 12 and 13(2) of the 2006 Act will be made, except at the absolute discretion of Ofcom.

### Penalty

10. Ofcom may impose a penalty on the Licensee in accordance with section 43A of the 2006 Act if the Licensee is or has been in contravention of the provisions specified in Schedule 1 paragraph 4(b) of this Licence.

### Radio Equipment Use

117. The Licensee shall ensure that the Radio Equipment is constructed and used only in accordance with the provisions specified in Schedule 1 of this Licence. Any proposal to amend any detail specified in Schedule 1 of this Licence must be agreed with ~~Ofcom~~~~the Secretary of State~~ in advance and implemented only after this Licence has been varied or reissued accordingly.

128. The Licensee shall ensure that the Radio Equipment is operated in compliance with the terms of this Licence and is used only by persons who have been authorised in writing by the Licensee to do so and that such persons are made aware of, and of the requirement to comply with, the terms of this Licence.

### **Access and Inspection**

~~139.~~ The Licensee shall permit a person authorised by ~~Ofcom~~~~the Secretary of State~~:

- (a) to have access to the Radio Equipment; and
- (b) to inspect this Licence and the Radio Equipment,

at any and all reasonable times or, when in the opinion of that person an urgent situation exists, at any time to ensure the Radio Equipment is being used in accordance with the terms of this Licence.

### **Modification, Restriction and Closedown**

~~1410.~~ A person authorised by ~~Ofcom~~~~the Secretary of State~~ may require the Radio Equipment or any part thereof, to be modified or restricted in use, or temporarily or permanently closed down immediately if in the opinion of the person authorised by ~~Ofcom~~~~the Secretary of State~~:

- (a) a material breach of this Licence has occurred; and/or
- (b) the use of the Radio Equipment is, or may be, causing or contributing to undue interference to the use of other authorised radio equipment.

~~1511.~~ ~~Ofcom~~~~The Secretary of State~~ may in the event of a national or local state of emergency being declared require the Radio Equipment to be modified or restricted in use, or temporarily or permanently closed down either immediately or on the expiry of such period as ~~Ofcom~~~~he~~ may specify. ~~Ofcom~~~~He~~ shall exercise this power by a written notice served on the Licensee or by a general notice applicable to holders of this class of Licence, ~~published by public broadcast or in the London, Edinburgh and Belfast Gazettes.~~

### **Geographical Boundaries**

~~1612.~~ This Licence does not authorise the establishment and use of the Radio Equipment on the Isle of Man or any of the Channel Islands.

### **Interpretation**

~~1713.~~ In this Licence:

- (a) the establishment, installation and use of the Radio Equipment shall be interpreted as establishment and use of stations and installation and use of apparatus for Wireless Telegraphy as specified in section ~~8(1)~~ of the ~~2006~~~~1949~~ Act;
- (b) the expression "~~undue~~ interference" shall have the same meaning that it has under the ~~2006~~~~1949~~ Act (~~Section 115~~);
- (c) the expression "inspect" includes examine and test;

[COMPANY NAME]- 3G Cellular Licence

~~First~~ Issued: [DATE] – Revision: [X] Licence Number: [XXXXXX]

- (d) the schedules and Annex form part of this Licence together with any subsequent schedule(s) which ~~Ofcom~~the Secretary of State may issue as a variation to this Licence at a later date; and
- (e) the Interpretation Act 1978 shall apply to the Licence as it applies to an Act of Parliament.

Issued by ~~Ofcom~~the Radiocommunications Agency on behalf of the Secretary of State for Trade and Industry.

~~Public Wireless Networks~~  
~~Radiocommunications Agency~~



[COMPANY NAME]- 3G Cellular Licence  
~~First~~ Issued: [DATE] – Revision: [X] Licence Number: [XXXXXX]  
**SCHEDULE 1 TO LICENCE NUMBER: XXXXXX**

Licence Class: **Third Generation Mobile**

Schedule date: [DATE]

This schedule forms part of Licence no. XXXXXX, issued to [COMPANY NAME] (“the Licensee”) on [DATE].

1. **Description of Radio Equipment Licensed**

In this Licence, the Radio Equipment means the base transceiver stations or repeater stations forming part of the Network (as defined in paragraph 2 below).

2. **Purpose of the Radio Equipment**

The Radio Equipment shall form part of a radio telecommunications network ("the Network"), in which approved user stations communicate by radio with the Radio Equipment to provide a telecommunications service.

3. **Approved Standards for the Radio Equipment**

The Radio Equipment covered by this Licence shall comply with the appropriate Interface Requirement (IR 2019 – Third Generation Mobile) or for equipment placed on the market before 8 April 2000, is required to be type approved in accordance with a recognised technical performance standard relating to the service licensed. The Radio Equipment shall comply with the requirements of Directive 99/5/EC (the "Radio Equipment and Telecommunications Terminal Equipment Directive").

4. **Special Conditions relating to the operation of the Radio Equipment**

(a) The Licensee shall install, maintain and use Radio Equipment (as specified in paragraph 10 of Schedule 1) in such a way as to enable the provision of, by no later than 31 December 2007, and to maintain thereafter, a telecommunications service by means of the Radio Equipment to an area where at least 80% of the population of the UK live.

(b) The Licensee shall install, maintain and use Radio Equipment (as specified in paragraph 10 of Schedule 1) in such a way as to enable the provision of, by no later than 30 June 2013, and to maintain thereafter, an electronic communications network that is capable of providing mobile telecommunications services to an area within which at least 90% of the population of the United Kingdom lives and with a 90% probability that users in outdoor locations within that area can receive the service with a sustained downlink speed of not less than 768kbps in a lightly loaded cell. Section 43A of the 2006 Act shall apply to any contravention of this provision.

~~(c)~~ During the period that this Licence remains in force and for 6 months thereafter, the Licensee shall compile and maintain accurate records of:

- (i) The following details relating to the Radio Equipment:
- (a) postal address;
  - (b) National Grid Reference (to 100 metres resolution);
  - (c) antenna height and type;
  - (d) radio frequencies in operation during the Licence term;
- (ii) a statement of the number of customers using the Network; and

without prejudice to this paragraph (~~cb~~), the Licensee shall furnish to ~~Ofcom~~~~the Secretary of State~~ in such a manner and at such times as reasonably requested, information in the form of documents, accounts, estimates, returns and any other information, which may be reasonably required for the purposes of verifying compliance with this Licence and for statistical purposes.

~~(d) In respect of femtocell equipment and smart/intelligent low power repeater equipment, the conditions relating to the keeping of records contained in sub-paragraphs 4(c)(i)(a), 4(c)(i)(b) and 4(c)(i)(c) shall not apply.~~

~~(ee)~~ The Licensee shall inform ~~the Ofcom~~~~Secretary of State~~ of the address of the premises at which this Licence and the information detailed at sub-paragraph (~~cb~~) above shall be kept.

~~(fd)~~ The Licensee shall submit to ~~Ofcom~~~~the Secretary of State~~ copies of the records detailed in sub-paragraph (~~cb~~) above at such intervals as ~~Ofcom~~~~the Secretary of State~~ shall notify to the Licensee.

~~(ge)~~ The Licensee shall, upon request, supply ~~Ofcom~~~~the Secretary of State~~ or any person authorised ~~on their~~~~by him in that~~ behalf with the name and address of any ~~subscribing customers~~~~registered users~~ of the Network, or require its agents to provide such information on its behalf.

#### ~~5. Site Clearance Requirements~~

~~The Licensee shall ensure that the Radio Equipment is operated in accordance with a valid site clearance certificate, issued by the Radiocommunications Agency on behalf of the Secretary of State, which is required for all the Radio Equipment except base transceiver stations incorporating transmitters radiating not more than 17 dBW EIRP and aerial systems, the highest point of which is less than 30 metres above ground level.~~

## TECHNICAL REQUIREMENTS

The Licensee shall ensure that the Radio Equipment performs in accordance with the following technical requirements.

**56. Frequency Band(s) of Operation**

The Radio Equipment is authorised to operate in the following frequency bands:

[Frequency range] XXXX – XXXX MHz: Base Receive

[Frequency range] XXXX – XXXX MHz: Base Transmit

[Frequency range] XXXX – XXXX MHz Base Transmit/Receive in Time Division Duplex

**67. Maximum Permissible EIRP**

(a) Frequency Division Duplex (FDD)

The Radio Equipment in Frequency Division Duplex (FDD) mode, is required to conform with the following EIRP limits:

Maximum EIRP per carrier	Maximum EIRP per MHz
<del>652</del> dBm	<del>6158</del> dBm/MHz

(b) Time Division Duplex (TDD)

The Radio Equipment in Time Division Duplex (TDD) mode is required to conform with the following EIRP limits:

Maximum EIRP per carrier	Maximum EIRP per MHz
62 dBm	58 dBm/MHz

(c) Time Division Duplex (TDD) operated in the base receive or base transmit frequency bands

If the Licensee chooses to operate Radio Equipment in Time Division Duplex (TDD) mode in either the base receive or the base transmit frequency band of operation, the EIRP limits for TDD defined in Section ~~67~~(b) also apply as a minimum. In addition to this, the Licensee may be required to take additional measures to ensure that deployment of TDD Radio Equipment in the base receive or base transmit frequency band does not cause undue interference to FDD Radio Equipment operated by a neighbouring licensee.

**78. ITU Emission Code**

5M00G7W

**89. Permissible Out of Block Emissions**

(a) Frequency Division Duplex (FDD)

Out of block emissions from the Radio Equipment in Frequency Division Duplex (FDD) mode must not exceed the following:

Offset from edge of block	Maximum permitted level	Measurement bandwidth
0 to 0.2 MHz	- 14 dBm	30 kHz
0.2 to 1.0 MHz	-14 -15( $\Delta f$ *-0.2) dBm	30 kHz
Beyond 1.0 MHz	-13 dBm	1.0 MHz

\*Note:  $\Delta f$  is the offset from the edge of the frequency block in MHz.

(b) Time Division Duplex (TDD)

Out of block emissions from the Radio Equipment in Time Division Duplex (TDD) mode must not exceed the following:

Offset from edge of block	Maximum permitted level	Measurement bandwidth
0 to 5 MHz	-23 dBm	1.0 MHz
Beyond 5 MHz	-30 dBm	1.0 MHz

(c) Time Division Duplex (TDD) operated in the base receive or base transmit frequency bands.

If the Licensee chooses to operate Radio Equipment in Time Division Duplex (TDD) mode in either the base receive or the base transmit frequency bands of operation, the limits for TDD defined in Section 89(b) also apply as a minimum. In addition to this, the Licensee may be required to take additional measures to ensure that deployment of TDD Radio Equipment in the base receive or base transmit frequency band does not cause undue interference to FDD Radio Equipment operated by a neighbouring licensee.

**940. Relevant Performance Standards**

The Radio Equipment is required either to comply with the relevant performance standards applicable at the time of installation or with other requirements in any applicable Interface Requirements, as referred to in article 4.1 of the "Radio Equipment and Telecommunications Terminal Equipment Directive" and issued to the Licensee.

The current relevant performance standards are:

- (a) UK Radio Licence Interface Requirement 2019- Third Generation Mobile;
- (b) ETSI TS 125.104: UTRA (BS) FDD; Radio Transmission and Reception;
- (c) ETSI TS 125.105: UTRA (BS) TDD; Radio Transmission and Reception.

**1044. Co-ordination**

The Radio Equipment shall be operated in compliance with such co-ordination procedures as are required by any Memorandum of Understanding with another neighbouring

administration (including the administrations of the Isle of Man and the Channel Islands) as notified by Ofcom, the Agency on behalf of the Secretary of State.

## 1142. Interpretation

In this Schedule:

- (a) “Maximum EIRP per carrier”. The EIRP (effective isotropic radiated power) is the product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna. The maximum EIRP in any direction from the base-station should be below this limit for any transmitted carrier. Power for this limit is defined as the mean modulated carrier power time averaged over any suitable time period in which the transmitter is continuously transmitting at its maximum operational power level;
- (b) “Maximum EIRP per MHz”. The EIRP per MHz is defined as the sum of the EIRP radiated by all transmitted carriers in any given direction within any contiguous 5 MHz block within an operator’s spectrum allocation, divided by 5;
- (c) The EIRP per carrier and the EIRP per MHz limits are to be considered separately for any deployment and the more stringent is to be complied with;
- (d) “Frequency block” means the frequency band of operation of the licensee defined in Section 6 of this Schedule;
- (e) “Out of block emissions” are defined as Radio Frequency (RF) emissions generated by the system operated by the licensee but radiated into the spectrum adjacent to the licensee’s frequency block;
- (f) “Maximum permitted level” (of out of block emissions) is the maximum power, integrated over the corresponding measurement bandwidth, that may be supplied by the transmitter to the antenna feeder line. Power is defined as the mean RF power time averaged over any suitable time period during which the transmitter is continuously transmitting at its maximum rated power;
- (g) “Frequency Division Duplex (FDD)” operation is defined as bi-directional communication in which one radio frequency carrier is used for transmission and a separate radio frequency carrier is used for reception;
- (h) “Time Division Duplex (TDD)” operation is defined as bi-directional communication using a single radio frequency carrier for transmit and receive, with transmission/reception taking place using discrete time slots;
- (i) “dBm” is an abbreviation for the power ratio in decibels (dB) of the measured power referenced to one milliwatt (mW);
- (j) A “femtocell” is a base station of the Network which operates at a power not exceeding 20dBm E.I.R.P. per carrier which may be established by customers of the

Network but which is or will be used only by and under the control of the Network, following the establishment of a telecommunications link between the femtocell and the Network;

(k) A “smart/intelligent low power repeater” is a repeater of the Network which operates with power not exceeding 24dBm E.I.R.P. per carrier, which may be established by customers of the Network who have written agreements with the Licensee and:

- The Licensee has ultimate control of the repeater, i.e. each individual repeater can be disabled remotely by the Licensee;
- The repeater operates only on the Licensee’s frequencies and with their valid Public Land Mobile Network Identifier;
- Must not cause undue interference to other spectrum users; and
- The repeater only transmits on the Licensee’s Base Receive frequencies when actively carrying a call (voice, video or data) signalling from serviced handsets.

(l) “User Station” means any vehicle mounted or hands portable mobile station designed for mobile use and/or any 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) Regulation in force from time to time 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.

~~Ofcom Public Wireless Networks  
Radiocommunications Agency~~