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## **Ofcom's decision to update the technical conditions of Vodafone's and Telefónica's mobile licences to enable the deployment of newer technologies including 5G**

Variation of certain licences held by Vodafone and Telefónica in the 900 MHz, 1800 MHz, 2100 MHz and 2.6 GHz bands

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**STATEMENT:**

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# 1. Overview

Following the Consultation,<sup>1</sup> we have decided that it is appropriate to amend the technical conditions of the mobile licences of Vodafone and Telefónica as requested and to make substantially similar licence changes available to all mobile licence holders operating in the relevant spectrum bands upon request. This decision will allow Vodafone to deploy the next generation of mobile technologies, including 5G services, in its 900 MHz, 1800 MHz, 2100 MHz and 2.6 GHz spectrum bands. In relation to Telefónica's 2.6 GHz licence, the decision will allow for the relaxation of technical parameters between Telefónica and adjacent spectrum holder Vodafone, in the 2570 to 2620 MHz sub-band.

These changes will enable licensees to provide innovative mobile services and to make more efficient use of spectrum. Consumers may also benefit from these services providing faster download speeds and improved coverage.

## What we have decided – in brief

We have decided that it is appropriate to make changes to the technical conditions of the mobile licences held by Vodafone and Telefónica as requested. The changes:

**Update the technical conditions of licences held by Vodafone in the 900 MHz, 1800 MHz, 2100 MHz and 2.6 GHz bands:** The variations will amend the licences with updated parameters to reflect the latest technologies and will remove technology restrictions within the licences making them technology neutral.

**Remove a restriction placed on Telefónica's unpaired spectrum in the 2.6 GHz band:** The variation will remove a restriction on the 5 MHz block within Telefónica's unpaired spectrum allocation adjacent to Vodafone's unpaired allocation. This will allow Telefónica to use an unrestricted 20 MHz of spectrum compared with the 15 MHz currently available. Vodafone's licence will be similarly varied.

Substantially similar changes are also available to other mobile licensees operating in the relevant spectrum bands upon request.

This decision follows a consultation on the proposals, published on 20 May 2021. The consultation closed on 1 July and we received seven non-confidential responses.

Licensees that would like similar changes made to their licences should contact us and make a formal request to vary their licences accordingly. If licensees have made a formal request for us to make similar changes to their licences as part of their response to the consultation, we will provide them with a draft version of their licence with precise updated technical parameters relevant to them. Once the licensee has agreed to the precise updated terms in their licences, we will vary them accordingly.

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<sup>1</sup> <https://www.ofcom.org.uk/consultations-and-statements/category-2/vodafone-and-telefonica-request-to-update-technical-conditions-of-mobile-licences>

## 2. Background

### Vodafone's and Telefónica's requests

- 2.1 In April 2021 Vodafone requested that we vary its 900 MHz and 1800 MHz licence “to incorporate reference to an interface requirement facilitating 5G usage” and to amend certain terms and conditions to align with the format of Ofcom’s more recently awarded licences. Vodafone also requested that Ofcom review the interface requirements relating to the 800 MHz, 1400 MHz, 2100 MHz and 2.6 GHz bands and to make any changes necessary to make them technology neutral and allow 5G usage.
- 2.2 We reviewed its licences and considered that Vodafone’s licences for the 800 MHz and 1400 MHz bands were already technology neutral and capable of deploying the next generation of services. However, we considered that Vodafone’s 900 MHz, 1800 MHz and 2100 MHz licences may need to be updated and that its 2.6 GHz licence may also need amendments to ensure that it could deploy the latest technologies.
- 2.3 In September 2021 Telefónica requested that we remove restrictions in one 5 MHz block within its unpaired spectrum allocation adjacent to Vodafone’s unpaired allocation. This would allow Telefónica to use an unrestricted 20 MHz of spectrum compared with the 15 MHz currently available. The variation would require some coordination with Vodafone, which confirmed its support to the licence variation request.
- 2.4 We published a public consultation on 20 May 2022, to seek views on the changes proposed by Vodafone and Telefónica.

### Our assessment framework and provisional assessment

- 2.5 We considered the licence variations requested by Vodafone and Telefónica in light of our relevant licensing functions and statutory duties.
- 2.6 The radio spectrum is a finite national resource of considerable economic and social value. In considering the variation of individual licences, we take into account our duties and in light of those duties, the factors that we consider include:
  - securing optimal spectrum use;
  - promoting competition;
  - encouraging innovation and investment;
  - benefits for consumers and citizens; and
  - the impact on spectrum users in the same and adjacent bands.
- 2.7 In reaching our provisional conclusion and final decision, we have balanced the advantages and disadvantages of updating the licences, in light of the relevant factors and evidence, in order to reach an outcome that most appropriately meets our relevant statutory duties.
- 2.8 We have considered both the likely impact on competition of making these changes and the likely impact on spectrum management, in particular the impact on existing licensed or exempted users of the adjacent spectrum bands.

2.9 We provisionally concluded that it would be appropriate to update the technical conditions contained in the relevant Vodafone and Telefónica licences and showed the changes that we proposed to make to each licence in Annex 6 to our consultation document. We said that substantially similar changes would be available to other MNOs with mobile licences in the relevant bands upon request.

## Consultation

2.10 The consultation closed on 1 July 2022. In the consultation we asked the following questions:

Question 1a: Do you have any comments on our proposal to agree to Vodafone's request for changes to its licences in the 900 MHz and 1800 MHz bands to enable 5G?

Question 1b: Do you have any comments on our proposal to make substantially similar licence changes available to the other MNOs with licences in the 900 MHz and 1800 MHz bands?

Question 2a: Do you have any comments on our proposal to agree to Vodafone's request for changes to its licence in the 2100 MHz band to enable 5G?

Question 2b: Do you have any comments on our proposal to make substantially similar licence changes available to the other MNOs with licences in the 2100 MHz band?

Question 3a: Do you have any comments on our proposal to agree to Vodafone's request for changes to its licence in the 2.6 GHz band to enable 5G?

Question 3b: Do you have any comments on our proposal to make substantially similar licence changes available to the other MNOs with paired spectrum licences in the 2.6 GHz band?

Question 4: Do you have any comments on our proposal to vary Telefónica's and Vodafone's licences in the 2570 MHz to 2620 MHz sub-band to relax restrictions in relation to the 5 MHz restricted block?

2.11 We received [seven non-confidential responses](#). A summary of the comments received and our responses to them are set out in Section 3.

## 3. Responses to the consultation

- 3.1 We received a total of seven non-confidential responses to the consultation (H3G, Vodafone, BT, Telefónica which responded under its network operational name Virgin Media O2 (VMO2), Network Rail, Electrosensitivity UK and TK Rebel. The responses have been categorised under the following themes:
- a) 5G updates;
  - b) Coordination with GSM-R; and
  - c) Other matters.

### 5G updates

- 3.2 Most respondents were generally in favour of the proposals to update conditions in the mobile licences to enable the deployment of 5G. Vodafone expressed its contentment with the proposed licence changes and gave consent for its licences to be varied at the earliest opportunity. VMO2 also expressed its support of our proposals to make similar licence changes available to other MNOs, as did BT, but on the proviso that the changes were made available to other licensees.
- 3.3 In our view the proposed changes would not only benefit the networks operated by Vodafone and Telefónica and therefore the network users, but they would also benefit the other MNOs operating in the affected bands. As a result, in the Consultation, we said that subject to the response to our consultation, we would make substantially similar changes available to other licensees operating in the spectrum bands that were the subject of our consultation. We can confirm that this is still our intention.
- 3.4 Any licensee that would like similar changes made to their licences, should contact us to make a formal request to vary their licences accordingly and we will provide a draft copy licence for their review. Following agreement from the licensee, we will vary the licence according to the agreed draft.<sup>2</sup>

### Technical changes

- 3.5 In its response, VMO2 also said that the TRP proposed for 1800 MHz and 2100 MHz (50 dBm/(5 MHz)) “is 7 dB lower than the ECC/CEPT upper bound in-band power recommendations” and that the TRP proposed for 2.6 GHz (46 dBm/5 MHz for AAS base stations) “is 7 dB lower than the lower ECC Decision (05)05 stated power level, in which the non-obligatory upper bound in-block power is stated as between 53 and 60 dBm/(5 MHz) for AAS base stations”. VMO2 asked Ofcom to clarify its rationale for these limits.

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<sup>2</sup> While our public consultation process has been completed, all mobile licence holders operating in the relevant spectrum bands may request substantially similar changes to their licences. For the avoidance of doubt the precise changes will depend on the particular conditions set out in each individual licence.

- 3.6 In our consultation we said that in most cases, the licence updates required to support the latest technologies and enable the use of “active antenna systems” (AAS) would include, among other things, the introduction of power limits expressed as “total radiated power” (TRP) for AAS. We also highlighted the relevant published CEPT reports and ECC decisions<sup>3</sup>, in which Ofcom has played a significant role, that contain much of the analysis related to the technical changes necessary for each band.
- 3.7 The recommended technical conditions set out in ECC’s published reports are based on analysis of coexistence of services within the same band, as well as coexistence in adjacent bands. In our consultation we reviewed the CEPT conclusions and exercised our judgement to determine appropriate TRP limits that are consistent with our existing EIRP limits. As set out in our consultation (paragraph 4.18), the in-band TRP limits that we proposed are lower than the maximum values recommended in the relevant CEPT reports (as are the EIRP limits set out in the existing licences) while also being high enough that they should not be a significant constraint on the ability of licensees to deploy AAS.
- 3.8 We consider that the maximum mean in-band power limit of 50 dBm/5 MHz TRP per cell (equivalent to 200 W in a 10 MHz channel) that we proposed for AAS in the 1800 MHz and 2100 MHz bands, reasonably reflects the conducted power of equipment that is deployed in these bands today. Therefore, our proposed in-band TRP limit, while lower than the one recommended in the CEPT reports, ensures consistency with current deployments which comply with the existing in-band EIRP limit. As an example, the current EIRP limit of 65 dBm/5 MHz per antenna allows a two-antenna system to transmit at an EIRP of up to 68 dBm/5 MHz per cell<sup>4</sup> which, based on the assumption of an antenna with a gain of 18 dBi being used<sup>5</sup>, is equivalent to a conducted power of 50 dBm/5 MHz per cell (or 200 W/10 MHz).
- 3.9 As set out in our consultation (paragraph 4.17), the in-block EIRP limit in the current 2.6 GHz band licences is lower than in the 1800 MHz and 2100 MHz bands, noting that a lower limit may be commensurate with protection of radar services in the adjacent spectrum, and we reflect this in the TRP limit of 46 dBm/5 MHz for AAS.
- 3.10 We consider that the approach we have taken to setting appropriate TRP limits is consistent with the approach we previously took when setting EIRP limits for these bands. It is also justified in that it supports coexistence of services in the band. Should licensees think in the future that higher powers (TRP or EIRP) enable further benefits, then they are free to request us to consider an appropriate licence variation at the time. We would then consider the impact of that request for an increase in power on other users within the band and adjacent bands.
- 3.11 BT’s response noted that the draft marked-up version of the 1800 MHz licence, shown in Annex 6 to our consultation, did not contain the in-block TRP limit of 50dBm / 5MHz per

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<sup>3</sup> See Table 2 - [Consultation: Ofcom’s response to Vodafone’s and Telefónica’s requests to update the technical conditions of their mobile licences to enable the deployment of newer technologies including 5G](#)

<sup>4</sup> The 3 dB increase from the EIRP limit per antenna to the EIRP limit per cell of a two-antenna system expresses, on a logarithmic scale, the fact that the EIRP per cell is double that of the EIRP from each antenna.

<sup>5</sup> Ignoring any transmission line losses, connector losses, and antenna inefficiencies

cell that we proposed to impose for AAS (consultation, paragraphs 4.11-4.19). We will correct this error by inserting the TRP limit in the draft versions of the revised licences that we intend to send to the licensees before implementing the changes to their licences. Since the in-band TRP limit for AAS will not apply in the 900 MHz band, we are also minded to split the current Schedule 1 to the 900 MHz and 1800 MHz licences held by Vodafone and Telefónica into two separate schedules (one for the 1800 MHz band, containing the in-band TRP limit for AAS, and one for the 900 MHz band, without such limit).

- 3.12 H3G told us that it was supportive of Ofcom’s stated policy goal to remove regulatory barriers that prevent the deployment of the latest available technology, where appropriate, as well as the assessment framework used by Ofcom to consider licence variations. However, with reference to the variation proposed for Vodafone’s licences in the 1800 MHz and 2100 MHz bands (or any other licensee that proposed such changes) H3G raised concerns about the validity of our assessment that the introduction of AAS into those bands would not increase interference to other incumbent spectrum users in those bands – specifically into H3G’s receive uplink or downlink in those bands.
- 3.13 H3G also expressed concern that there would not be clear responsibility for remedying interference should it occur. Referencing the example of terms in its 1400 MHz licence<sup>6</sup>, H3G suggested that an appropriate safeguard against interference would be to insert formal obligations into the licences, as they felt that this approach would clearly establish the lines of responsibility for remedying instances of interference should they occur.
- 3.14 While we note H3G’s concerns, we consider that our standard licence conditions address how MNOs are expected to operate in the event that one of them causes harmful interference to another MNO. As such, in the event of any interference, we would expect all affected parties to co-operate to resolve such issues in accordance with the terms of their licence.
- 3.15 In conclusion, having reviewed the comments discussed above, we remain of the view that it is appropriate to update the relevant licence conditions to enable the deployment of 5G as proposed in our consultation.

## Coordination with GSM-R

- 3.16 There is an existing Notice of Coordination Procedure required for 3G or 4G deployment under the Public Wireless Network Licences covering the 900 MHz band (the ‘Notice’) published by Ofcom in July 2013.<sup>7</sup> Network Rail responded specifically on maintaining that requirement for coordination with the proposed 5G updates to Vodafone’s licences in the 900 MHz and 1800 MHz bands.
- 3.17 Network Rail expressed its view that coordination between the mobile operators in the 900 MHz band and Network Rail continues to ensure protection of the GSM-R network. Network Rail noted that while its recent cab radio upgrade provides additional protection

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<sup>6</sup> H3G reference paragraph 4 of Schedule 1 of the licence - [SA 1472 -1492 MHz LICENCE - H3G 1053624 \(ofcom.org.uk\)](#)

<sup>7</sup> [Notice of Coordination Procedure required for 3G or 4G deployment under the Public Wireless Network Licences covering the 900 MHz band](#)



against radio interference, it does not remove all risk of interference and requested that Ofcom notes and specifies that coordination is still needed.

- 3.18 Network Rail made reference to the benefits experienced from the current 'Notice'. Network Rail do not propose amendment to the 'Notice' but rather assurances that the principle of coordination is written into any licence variations.
- 3.19 Having considered Network Rail's request, our expectation is that the MNOs will continue to cooperate with Network Rail in relation to the deployment of 5G base stations, in the same way that they have done so far for the deployment of 3G and 4G base stations.
- 3.20 The MNO licences already contain terms that are intended to prevent causing undue interference to other users. We are of the view that alongside the existing 'Notice', this is sufficient to support the ongoing protection of the GSM-R network and there is no need to amend that 'Notice' at this stage. However, noting Network Rail's concerns, this is something that we will consider should it become necessary in the future.

## Other matters

### Licence exempt regulations

- 3.21 As part of BT's response, it noted that as currently drafted, the licence exempt regulations make reference to older technologies. BT therefore considered that the exemption regulations themselves require updating so that they are also technology neutral and cover 5G use for all of the frequency bands used by MNOs.
- 3.22 We agree that it would be appropriate to update our licence exempt regulations to reflect updated versions of the Interface Requirement documents. We will look to do this at the next earliest opportunity.

### EMF and health concerns

- 3.23 Electrosensitivity UK and TK Rebel both expressed concerns about our consultation proposals. Electrosensitivity UK set out its view, that the safety standards and guidelines provided by PHE/UKHSA are flawed and unscientific and referred to alternative sources of guidelines on the matter, which it claimed would be more beneficial to Ofcom. In its response TK Rebel expressed its view that radio frequencies were harmful to humans and wildlife; it also cited several health issues which it said were attributable to radio frequencies used in mobile phone communications and wireless devices.
- 3.24 In the UK, the UK Health and Security Agency (UKHSA)<sup>8</sup> takes the lead on public health matters associated with EMF and has a statutory duty to provide advice to Government on any health effects that may be caused by exposure to EMF. UKHSA's main advice is that EMF exposure should comply with the internationally agreed limits in the ICNIRP Guidelines. UKHSA's view is that "the overall exposure [from all mobile network EMFs,

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<sup>8</sup> [UKHSA took over these responsibilities from Public Health England \(PHE\) on 1 October 2021](#)

including 5G] is expected to remain low relative to [the ICNIRP] guidelines and, as such, there should be no consequences for public health.”<sup>9</sup>

- 3.25 Whilst we note the concern of the two respondents, Ofcom believes that it is appropriate for us to take into account the advice of UKHSA in relation to EMF in our management of the radio spectrum. It is worth noting that Ofcom has been measuring EMF levels for many years and we publish the results of these measurements on our website. Our measurements<sup>10</sup>, in busy publicly accessible areas near to mobile phone masts where we can expect to see high levels of mobile phone use, have consistently shown that EMF levels are well within the internationally agreed levels in the ICNIRP Guidelines.
- 3.26 Ofcom has also worked with the UK Government to produce a guide to 5G<sup>11</sup> which provides further information on the technological advances of 5G, such as use of higher frequencies, advanced antenna technology and small cells.

## Consultation proposals that received no response

- 3.27 In our consultation we also set out proposals relating to the following:
- a) Allowing the use of downlink and uplink frequencies in the 900 MHz, 1800 MHz and 2100 MHz band licences held by Vodafone (paragraphs 4.20-4.21);
  - b) Making administrative changes to Vodafone’s licences (paragraphs 4.22-4.23); and
  - c) Removing the 5 MHz restricted block of the 2.6 GHz band licence held by Telefónica (paragraphs 7.25-7.33).
- 3.28 We did not receive any comments from stakeholders in response to these proposals and have decided to implement these changes as proposed.

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<sup>9</sup> <https://www.gov.uk/government/publications/5g-technologies-radio-waves-and-health/5g-technologies-radio-waves-and-health>

<sup>10</sup> <https://www.ofcom.org.uk/spectrum/information/mobile-operational-enquiries/mobile-base-station-audits>

<sup>11</sup> [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0015/202065/5g-guide.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0015/202065/5g-guide.pdf)

## 4. Decision

- 4.1 We have considered the licence variations requested by Vodafone and Telefónica in light of our relevant licensing functions and statutory duties, and taking account of the comments received in response to our consultation. Our conclusion is that it is appropriate to update the technical conditions contained in the relevant licences which are currently held by Vodafone and Telefónica, as proposed in our consultation.
- 4.2 Overall, we believe that consumers are likely to benefit from the licence variations from as a result of higher quality of innovative mobile services being available and through the optimal spectrum use on the part of licensees. Consumers may also benefit from these services providing faster download speeds and improved coverage.
- 4.3 In our view, these changes to the licences are:
- **objectively justified** in that they will enable optimal use of spectrum and encourage investment and innovation in the services that can be deployed in various bands;
  - **not unduly discriminatory** against particular persons or against a particular description of persons, in that substantially similar licence changes are available to other licence holders upon request;
  - **proportionate** to what they are intended to achieve, in that we are updating several conditions to make them less restrictive to take account of changes in market conditions since the licences were issued; and
  - **transparent in relation to what they are intended to achieve**, in that the licence changes, and our underlying objectives and reasoning, are described and explained in our consultation and this statement.
- 4.4 We consider that our decision will further the performance of our general duties in section 3 of the Communications Act 2003 (the '2003 Act'). This is because, as set out above, citizens and consumers will likely benefit from higher quality enhanced mobile broadband services and optimal use of spectrum.
- 4.5 As set out above (paragraph 2.8), in reaching our decisions, we have considered both the likely impact on competition of making the relevant changes and the likely impact on spectrum management, in particular the impact on existing licensed or exempted users of the adjacent spectrum bands.
- 4.6 We have also assessed the impact of our decision on persons sharing protected characteristics and in particular whether they may discriminate against such persons or impact on equality of opportunity or good relations. In the consultation (paragraph 2.19), we said that we did not consider our proposals had any equality implications under the Equality Act 2010 or the Northern Ireland Act 1998. We did not receive any comments in response to this and we remain of this view.
- 4.7 In addition to our consultation proposals, we have also decided to implement the following changes:
- a) As set out in paragraph 3.11 above, we have decided to split the current Schedule 1 to the 900 MHz and 1800 MHz licences held by Vodafone and Telefónica into two

separate Schedules, since the in-band TRP limit for AAS will not apply in the 900 MHz band;

- b) In our consultation (paragraphs 8.12-8.13) we highlighted the provisions of ECC Recommendation (21)02<sup>12</sup> that was approved in November 2021. The recommendation looked at the conditions to ensure that military radiolocation systems operating below the 3.4 GHz band were protected from indoor non-AAS small cells operating in the 3.4 to 3.8 GHz band.

In its response to the consultation, Vodafone said that it welcomed the publication of the document and also formally requested that we vary its licences to reflect the recommendations.

We received no comment in relation to this potential licence update from any other stakeholder. As Vodafone has requested that we update their licence to reflect the recommendations, we will update their 3.4 GHz licence accordingly, following the procedure set out in paragraph 3.4 above.

## Next steps

- 4.8 Given the responses we have received, we intend to make the licence variations available to the licensees as requested.
- 4.9 We will make substantially similar changes available to other mobile licensees operating in the relevant spectrum bands upon request.
- 4.10 Once varied, updated versions of the licences will be published on the Ofcom website.

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<sup>12</sup> [ECC Recommendation \(21\)02 \(cept.org\)](#)

# A1. Respondents

TK Rebel

Electrosensitivity UK

BT/EE

Network Rail

Vodafone

H3G

Telefónica (VM/O2)

## A2. Legal Framework

- A2.1 This annex provides an overview of the main legislative provisions relevant to wireless telegraphy licensing and the variations that we have decided to make to the relevant licences. It is not a full statement of all the legal provisions which may be relevant to Ofcom's functions and to wireless telegraphy licensing.
- A2.2 The applicable legal framework derives from our duties and powers under both the Communications Act 2003 (the '2003 Act') and the Wireless Telegraphy Act 2006 (the '2006 Act').

### Licence variation

#### Ofcom's powers to vary a spectrum licence

- A2.3 Our powers to carry out our spectrum functions are set out in the 2006 Act. Such powers include, under sections 9 and 10, the general power to revoke or vary any wireless telegraphy licences. Schedule 1 of the 2006 Act sets out a process for the variation of wireless telegraphy licences.
- A2.4 We have a duty set out in section 9(7) of the 2006 Act to ensure that wireless telegraphy licence conditions are objectively justified in relation to networks and services to which they relate, non-discriminatory, proportionate and transparent.
- A2.5 We have a broad discretion under paragraph 6 of Schedule 1 of the 2006 Act to vary licences, subject to certain limitations:
- pursuant to paragraph 6A of Schedule 1 of the 2006 Act, any variation of a wireless telegraphy licence must be objectively justifiable;
  - UK obligations under international agreements where use of spectrum has been harmonised;
  - section 5 of the 2003 Act and section 5 of the 2006 Act enable the Secretary of State to give us directions in respect of the carrying out of our spectrum functions;
  - we must act in accordance with our statutory duties, including our duty to secure optimal use of the spectrum and our duties under section 3 of the 2006 Act; and
  - general legal principles, which include the duties to act reasonably and rationally when making decisions and to take account of any legitimate expectations.

#### The licence variation process

- A2.6 Paragraph 7 of Schedule 1 of the 2006 Act sets out a process for the variation of wireless telegraphy licences.
- A2.7 Where we propose to vary a wireless telegraphy licence, we must:
- give the licensee a notice which sets out the reasons for the proposed variation and specifies the period within which the licensee may make representations about the proposal.

- A2.8 We must then within 1 month of the end of that period:
- decide whether or not to vary the licence in accordance with our proposal or with modifications; and
  - notify the licensee of our decision and the reasons for it.
- A2.9 However, this process does not apply to a proposed licence variation that is made at the request or with the consent of the licensee.

## **Ofcom's duties when carrying out spectrum functions**

- A2.10 In carrying out our spectrum functions we have a duty under section 3 of the 2006 Act to have regard, in particular, to:
- the extent to which the spectrum is available for use, or further use, for wireless telegraphy;
  - the demand for use of that spectrum for wireless telegraphy; and
  - the demand that is likely to arise in future for such use.
- A2.11 We also have a duty to have regard, in particular, to the desirability of promoting:
- the efficient management and use of the spectrum for wireless telegraphy;
  - the economic and other benefits that may arise from the use of wireless telegraphy;
  - the development of innovative services; and
  - competition in the provision of electronic communications services.

## **Ofcom's general duties**

- A2.12 Our principal duty under section 3(1) of the 2003 Act, when carrying out our functions, is:
- to further the interests of citizens in relation to communications matters; and
  - to further the interests of consumers in relevant markets, where appropriate by promoting competition.
- A2.13 In doing so, we are also required by section 3(2) to secure (among other things):
- the optimal use of spectrum, and
  - the availability throughout the United Kingdom of a wide range of electronic communications services.
- A2.14 Section 3(4) also requires us to have regard to the following matters (amongst others):
- the desirability of promoting competition in relevant markets;
  - the desirability of encouraging investment and innovation in relevant markets;
  - the different needs and interests, so far as the use of the electro-magnetic spectrum for wireless telegraphy is concerned, of all persons who may wish to make use of it; and
  - the different interests of persons in the different parts of the United Kingdom, of the different ethnic communities within the United Kingdom and of persons living in rural and in urban areas.

- A2.15 Section 4 of the 2003 Act requires us, when carrying out our spectrum management functions, to act in accordance with additional requirements, including:
- the requirement to promote competition; and
  - the requirement to promote the interests of all members of the public in the UK.
- A2.16 Where it appears to us that any of our duties in section 3 of the 2006 Act conflict with one or more of our general duties under sections 3 to 6 of the 2003 Act, we must give priority to our duties under the 2003 Act.