



# VHF Spectrum Release in the range 143 MHz to 156 MHz Call for Input

Consultation

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## Section 1

# Summary

- 1.1 Around 6 MHz of spectrum between 143 MHz and 156 MHz is becoming available for civil use across England, Wales and Northern Ireland following its release by the Emergency Services in England and Wales, and by the Police Service in Northern Ireland. Equivalent spectrum in Scotland may become available at a later date.
- 1.2 This Call for Input seeks stakeholder views on the types of services this spectrum could be used for (new and/or existing services), on the level of prospective interest, and on the technical (and other) conditions which would be required to enable these services.
- 1.3 This spectrum falls in a VHF frequency band which is used mainly by Private Mobile Radio (PMR, sometimes also referred to as Business Radio) where it is used in the relatively narrow channel widths that apply under our current set of PMR licence products. We expect this newly available spectrum to be of significant interest to this group of users. However, given the amounts of spectrum on offer, some of it in significant blocks of contiguous bandwidth (up to 1 MHz), it may be that this sector might wish to access the spectrum in a way that enables new types of services and applications that aren't possible under the current licence products. In addition, there may well be other types of user, outside of the current Private Mobile Radio sector, that are also interested in accessing this spectrum. We will consider all potential uses and users that can be accommodated in this spectrum.
- 1.4 The availability of VHF spectrum in this quantity, and at one point in time, is a rare and possibly unique opportunity. This Call for Input offers the Private Mobile Radio sector and other industry sectors an opportunity to consider and make known their views on the potential uses and markets this spectrum can address and on the ways in which the spectrum would need to be packaged to enable these services. It also allows us to gauge the level of interest in using spectrum in this frequency range. These are all important factors in deciding how best to release the spectrum.
- 1.5 We invite responses from stakeholders who have general views on potential future uses and on how we should release the spectrum, as well as from stakeholders who have a specific purpose in mind for which they themselves would like to access this spectrum.

## Section 2

# Call for Input

## Spectrum available

### Source of the spectrum availability

- 2.1 The spectrum in question has, until recently, been allocated for public safety use by the police and fire services. Following the migration of these services onto new communications networks the emergency services in England and Wales and in Northern Ireland have decided to withdraw their reservations over this spectrum<sup>1</sup>. Accordingly, the spectrum has now been redesignated as being available for civil use.

### What spectrum bands are in scope?

- 2.2 The tables below outline the start and end frequencies of the spectrum ranges within which spectrum is available for release. Table 1 shows the total amount of spectrum available in each frequency range. However, this spectrum is not available as a single contiguous block in each frequency range as a few channels have been retained for Public Safety use. Nevertheless, the spectrum is still available in significant blocks as indicated in table 2 which shows the size of the largest contiguous block available in each frequency range. The second and third columns in the tables below show the amount of spectrum in England and Wales and Northern Ireland respectively. The final column shows the amount of spectrum where exactly the same frequencies are available for release in both England and Wales and Northern Ireland.

**Table 1. Spectrum available in England, Wales and Northern Ireland (MHz)**

Frequency Ranges	England, Wales	Northern Ireland	England, Wales, Northern Ireland
143 - 144	1.000	1.000	1.000
146 - 148	1.9125	1.7625	1.7125
152 - 153.0625	1.025	1.050	1.0375
154 - 156	1.9375	1.725	1.7125
Total	5.875	5.5375	5.475

<sup>1</sup> The status of this spectrum in Scotland has not yet been fully reviewed by the relevant public safety stakeholders.

**Table 2. Largest contiguous block of spectrum (MHz)**

Frequency Ranges	England, Wales	Northern Ireland	England, Wales, Northern Ireland
143 - 144	1.000	1.000	1.000
146 - 148	0.975	0.4625	0.4625
152 - 153.0625	0.9875	1.05	1.000
154 - 156	1.2625	0.4125	0.4125

## Potential uses for the spectrum

2.3 Spectrum in the same Mid Band VHF range (138 to 165 MHz) is currently made available for business radio type uses via one of three main standard licence products<sup>2</sup>:

- Area Defined licence: assignments made in 50km<sup>2</sup> geographic squares aligned to the Ordnance survey grid or for one or more countries within the UK. The licensee has to ensure compliance with boundary conditions defined in terms of power density criteria.
- Technically Assigned licence: assignments that are coordinated with existing users under spectrum management tools (that predict the coverage area and sterilised area from a fixed location together with a range of technical parameters that are specified within the licence schedule).
- Light licence, of which there are three different sub-types, each of which has a pre selected set of channels from a range of PMR bands. This enables the user or supplier to select the most appropriate channel/s for their application. These licensees share with others using the same light licence product and, in light of this, should expect to be polite and allow equitable access to all users. The number of sharers is not controlled<sup>3</sup>. The three light licence categories are:
  - Simple UK – giving handheld, mobile to mobile coverage only
  - Simple site – allows for a low power base station to provide (typically) in building coverage to handhelds

<sup>2</sup> The existing channel plans provide for these products to be licenced in channel widths of 25kHz, 12.5kHz or 6.25kHz, although it would be possible for these existing licence products to be made available in larger channel widths (with other technical conditions being the same) where enough unused spectrum is available to enable this (as would be the case with this newly available spectrum). There are also both simplex and duplex versions available for each licence product except in the case of the “Simple UK” light licence product (which is simplex only). Licence terms and conditions for existing Private Mobile Radio can be found at <http://licensing.ofcom.org.uk/radiocommunication-licences/business-radio/guidance-for-licensees/information/stakeholders-information/licence-document-templates/>.

<sup>3</sup> There is no technical coordination of light licences but Ofcom needs to have a record of where spectrum is being used in bands that are used by the MoD and also to enable International coordination obligations to be met (a light licence approach, rather than licence exempt approach, is therefore required)

- Suppliers Light – provides for PMR suppliers to hire out equipment for short duration projects and also to enable immediate use of a system whilst a permanent frequency assignment is arranged.
- 2.4 These licences are available on a “first come first served” basis (i.e. if the frequency channel at the requested location is available when the licence applicant applies, then the applicant will have this spectrum assigned to it).
- 2.5 A total of just over 7MHz is available to existing business radio users in Mid-Band at present (with almost all channels already being assigned in at least some locations). The newly available spectrum therefore represents an increase in supply of nearly 80% in this band.
- 2.6 The most straightforward way for us to release this newly available spectrum would be to make it available under exactly the same terms as under our current licence products (i.e. same technical conditions, and on a first come first served basis etc). To do this we would add the spectrum ranges in table 1 to the list of channels for which we can issue one of the above licence types. The only decision we would need to make is how much of the new bandwidth to allocate to the different licence types (since light licences cannot share the same frequency channels as area defined and technically assigned licences).
- 2.7 Whilst we could adopt this approach, there is a risk that it would not make best use of the opportunity created by the vacation of this spectrum by current users. It is very rare to have this large amount of spectrum become available on a nationwide basis, in large contiguous blocks and at one point in time. For example, the amounts of contiguous bandwidth could support new uses which are not possible under the 6.25, 12.5kHz and 25kHz channel widths that are currently supported in our standard business radio licence products in VHF bands. Alternatively, it might enable dealers and suppliers to acquire enough spectrum to support a business model based on spectrum leasing. As another example, the fact that the spectrum is available on a nationwide basis could enable current users to consolidate existing holdings which may be less efficiently spread over a number of different frequency channels at present (eg. where these were built up over time on the basis of what frequencies were available at the time). Each of these example uses would raise different issues for our approach to spectrum release – as would other possible uses beyond these examples.
- 2.8 We are therefore approaching the release of this spectrum with an open mind on how it might best be done. Gathering stakeholders views is a vital part of this process; hence, this Call for Input.

## **Ofcom’s approach to the Spectrum Release**

- 2.9 When assessing how best to release spectrum we consider:
- the technical conditions attaching to the use of the spectrum
  - the method of release
  - the timing of release

## Technical conditions

- 2.10 The technical conditions attached to a licence (or to regulations which authorise use on a licence exempt basis) will influence strongly the way in which the spectrum can be used. The key technical conditions will relate to the bandwidth, the transmit power limits and the geographical coverage. In general, we seek to set the technical conditions so as to maximise the flexibility in the ways that the spectrum can be used, but taking account of the need to co-exist (ie. avoid interference), both with users in adjacent spectrum, and with neighbouring users within the spectrum band itself.
- 2.11 When deciding on the technical conditions we therefore gather information on the range of potential uses and, if some of these potential uses are unable to co-exist, then we have to decide how to allocate the spectrum as between these competing uses (see below).

### ***Technical Interface Requirements***

- 2.12 The technical conditions of use are generally set out in the licence itself. They may also be covered in a document called an Interface Requirement which has been agreed through a process mandated by the European Commission. (although an Interface Requirement may cross refer to an established ETSI standard - and will typically do so in the case of licence exempt use)
- 2.13 If a spectrum award is made for a new product (a non private mobile use) Ofcom may be required to draft a new Interface Requirement to allow the prospective use to comply with required criteria (to define the characteristics at the block edges).
- 2.14 If spectrum is made available for assignment under an existing Business Radio product then it will be expected to comply with [UK Interface Requirement 2044](#)<sup>4</sup> and [Technical Frequency Assignment Criteria](#).<sup>5</sup> Emission boundary conditions will need to be met. For Private Mobile Radio, an emission boundary is set at -104dBm per 12½ kHz (for more information please refer to the Business Radio Technical Frequency Assignment Criteria).

### ***International Coordination***

- 2.15 International coordination is required to protect the UK neighbours' systems from harmful interference and to also protect UK assignments from harmful interference from our neighbours' systems.
- 2.16 The protection of our neighbours' systems can be assumed through meeting the requirements of a relevant Memorandum of Understanding (MoU) and / or Agreement. Any award made in the spectrum 143-156MHz may require a MoU with neighbouring countries impacted by the proposed use in the band. Technical boundary conditions might need to be applied at the England and Scotland border under certain circumstances.

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<sup>4</sup> The UK Interface Requirement 2044 contains the requirements for the licensing and use of Business Radio Land Mobile Services covering Business Radio (Area Defined), Business Radio (Technically Assigned) and Business Radio (Light Licence) authorisations in specified frequency bands

<sup>5</sup> The technical frequency assignment criteria (TFAC) are the principles that Ofcom employs in the business radio frequency bands

- 2.17 Mid Band is covered by the CEPT Recommendation TR 25-08<sup>6</sup> and there is an opportunity for this spectrum to be structured in accordance with this recommendation offering the opportunity of pan European services if the matching spectrum is available from other administrations. The UK currently uses the reverse configuration<sup>7</sup> that does not allow for pan European services in this frequency range.

### **Method of spectrum release.**

- 2.18 Ofcom has the ability to use different primary assignment mechanisms to release spectrum in its pursuit of efficient management and use of radio spectrum.
- 2.19 In general, there are four procedures for making spectrum available:
- Licence exemption;
  - Assignment on a first-come first-served basis where applying for a standard licence product;
  - Award of licences via comparative selection (sometimes referred to as a beauty contest); and
  - Award of licences via auction.
- 2.20 The licence exempt route is relevant where radio stations, equipment or apparatus can be exempted from the need to hold a wireless telegraphy licence as their use is not likely to involve any undue interference to other legitimate use of radio spectrum. Ofcom makes Regulations detailing the particular technical requirements which equipment must meet in order to not require a licence. This approach is most relevant for those uses which have low transmit power levels. As Licence Exempt spectrum is available to anyone using compliant equipment, licence exemption does not provide users with any form of protection from other users.
- 2.21 The first come first served approach will usually be appropriate where demand for spectrum does not exceed supply. Licences are assigned to applicants in the order of their application. The licence assignment process and conditions provides users with protection from other users. As noted above, the existing Business Radio licence products are issued on a first come first served basis.
- 2.22 In a comparative selection, licences are assigned to the applicants that best satisfy a set of defined selection criteria. This approach may be appropriate where, for example, spectrum is being assigned for a specific use on public policy grounds. It might also be appropriate in a case where, for example, we considered that a particular approach to third party spectrum management might be the best way of promoting spectrum efficiency.
- 2.23 Auctions are typically used as the means to release spectrum in cases where demand exceeds supply. This process, if designed appropriately, assigns the spectrum to those users that value it most highly and which, under given

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<sup>6</sup> CEPT Recommendation TR 25-0825 08 - Planning Criteria and Co-ordination of Frequencies in the Land Mobile Service in the range 29.7MHz -921MHz

<sup>7</sup> The spectrum is currently configured with base transmit frequencies lower than the mobile transmit frequency and the UK uses a range of duplex frequency separation. The CEPT convention is Base Transmit highr than the Mobile Transmit and usually with a 10MHz duplex separation.

conditions, is consistent with our duty to promote optimal use of spectrum. However, an auction can be time-consuming and costly to set up and run which means that it is more appropriate for larger amounts of spectrum that have high potential value in use.

### **Speed of release.**

- 2.24 The speed with which we seek to release this spectrum will depend on the range of policy issues we will need to address after receiving your input in response to this Call for Input. For example, it would be a relatively quick process to make the spectrum available under the existing set of Business Radio licence products under the current first come, first served approach. In contrast, it could take considerably longer to develop a new licence product with different technical conditions and to make these available via an auction process.
- 2.25 It is also possible that we could decide to release parts of the spectrum at different points in time. For example we could consider holding back some of this spectrum now so that we can make it available at a future date to cater for future technological developments.
- 2.26 If there are a number of significant areas requiring substantial effort to address then we would probably need to prioritise them and plan a programme of distinct work streams over time. The scope and timing of each will depend in part on the views of stakeholders, but will also need to take account of the availability of Ofcom resources in light of competing priorities.

### **Call for input**

- 2.27 The purpose of this Call for Input is to:
- gain insight into the potential future uses of this newly available spectrum within the range of 143MHz to 156MHz, and the associated drivers of demand;
  - give stakeholders the opportunity to express your views on how Ofcom should approach the release of this additional spectrum.
- 2.28 We welcome responses from stakeholders who wish to tell us about a specific requirement for access to spectrum in these bands (either now or which they anticipate at some point in future). In these cases, it would be helpful to understand the specific nature of these requirements and Appendix 4 (Questions on Specific Uses) sets out a list of questions on your prospective use that we invite you to answer. Please note, however, that we are not inviting formal applications for licensed access to this spectrum at this stage and that submissions in response to this Call for Input do not confer any status in the event that we subsequently decide to award this spectrum on a first come first served basis.
- 2.29 Where stakeholders want to express views or provide information on how we should release the spectrum (whether or not you also wish to provide information on a specific requirement for spectrum access) then we welcome a written response to the following questions:

*Q1. What future uses might this spectrum support?*

*Q2 What implications might these possible future uses have for the way in which this spectrum is configured in terms of transmit powers, bandwidth and geographic coverage? For example:*

- Could these possible future uses be accommodated under the existing Business Radio licence products? If so, would they need the channel widths of the existing Business Radio licence products to be increased above 25 kHz ?*
- Alternatively, would they require an entirely new licence product to be developed?*
- Do you think that we should allocate (at least) some of this spectrum for licence exempt use?*
- If (at least a part of) this spectrum is made available for use under the existing Business Radio licence products, do you think that more spectrum should be allocated for light licence products as against technically assigned or area defined products?*

*Q3 What factors should Ofcom take into account in deciding how to make this spectrum available (both in terms of the choice of release mechanism and in terms of the timing and speed of release)?*

2.30 We will develop our policy for releasing this spectrum in light of the responses we receive. Depending on the issues raised in these responses we may set out specific proposals for release in a subsequent consultation document.

2.31 As this call for input seeks stakeholder guidance over a period that covers the Olympic and Para Olympic Games we have set a deadline for responses of 12<sup>th</sup> October 2012 but we welcome contributions before this date.

# Annex 1. Responding to this call for input

## When to respond

- A1.1 Stakeholders have until **5 p.m. Friday 12 October 2012** to respond to this Call for Input. During that time we may also engage informally with stakeholders through bilateral meetings. Any stakeholders that wish to have a meeting with the Ofcom project team should get in touch as soon as possible. Please email [kevin.delaney@ofcom.org.uk](mailto:kevin.delaney@ofcom.org.uk)

## How to respond

- A1.2 Ofcom strongly prefers to receive responses using the online web form at <http://stakeholders.ofcom.org.uk/consultations/call-for-input/howtorespond/>, 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 responses - particularly those with supporting charts, tables or other data - please email [kevin.delaney@ofcom.org.uk](mailto:kevin.delaney@ofcom.org.uk) attaching your response in Microsoft Word format, together with a consultation response coversheet.
- A1.4 Responses may alternatively be posted to the address below, marked with the title of the consultation.
- Kevin Delaney  
03:51  
Ofcom  
2A Southwark Bridge Road  
London SE1 9HA
- A1.5 Note. 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.

## If you require 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 Kevin Delaney on 020 7981 3143.

## Confidentiality

- A1.8 We believe it is important for everyone interested in an issue to see the views expressed by 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 period allowed for responding, we will assess responses and, where appropriate, publish proposals for the way we will manage the spectrum bands.
- A1.12 We expect to publish a Consultation document during the winter of 2012. Whether this includes formal proposals for changes to the management of the spectrum will depend in part on the nature of the information provided in response to the call for input.
- A1.13 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

- A1.14 Ofcom seeks to ensure that responding to a Call for Input is easy as possible. For more information please see our consultation principles in Annex 2.
- A1.15 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.
- A1.16 If you would like to discuss these issues or Ofcom's consultation processes more generally you can contact Graham Howell. Alternatively contact Vicki Nash, Director Scotland, who is Ofcom's consultation champion:

Graham Howell  
Secretary to the Corporation  
Ofcom  
Riverside House  
2A Southwark Bridge Road  
London SE1 9HA

Tel: 020 7981 3601  
Email [graham.howell@ofcom.org.uk](mailto:graham.howell@ofcom.org.uk)

## Section 4

# Annex 2. Ofcom's consultation principles

A1.17 Ofcom has published the following principles that it will follow for each public written consultation:

### Before the consultation

A1.18 Where possible, we will hold informal talks with people and organisations before announcing a 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

A1.19 We will be clear about who we are consulting, why, on what questions and for how long.

A1.20 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.

A1.21 We will consult for up to 12 weeks depending on the potential impact of our proposals.

A1.22 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.

A1.23 If we are not able to follow one of these principles, we will explain why.

### After the consultation

A1.24 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.

## Section 5

# Annex 3. Consultation response cover sheet

- A1.25 In the interests of transparency and good regulatory practice, we will publish all responses to this Call for Input in full on our website, [www.ofcom.org.uk](http://www.ofcom.org.uk).
- A1.26 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.
- A1.27 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.
- A1.28 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/).

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. 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.

### BASIC DETAILS

Consultation title: [VHF Spectrum Release in the range 143 MHz to 156 MHz](#)

To: [Kevin Delaney, Ofcom](#).

Name of respondent:

Representing (self or organisation/s):

Address (if not received by email):

## CONFIDENTIALITY

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

Nothing	<input type="checkbox"/>	Name/contact details/job title	<input type="checkbox"/>
Whole response	<input type="checkbox"/>	Organisation	<input type="checkbox"/>
Part of the response	<input type="checkbox"/>	If there is no separate annex, which parts?	

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

## DECLARATION

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

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

Name

Signed (if hard copy)

## Section 6.

# Annex 4. Questions on Specific Uses

If you have a specific use in mind for the spectrum bands in question, we would find it helpful to understand the characteristics of this potential or prospective use (which we will treat as confidential if you ask us to do so). We set out below a list of questions about this prospective use which we invite you to answer (in addition to the more general questions set out in section 2). You may not choose to supply answers to all the questions; however, by supplying more information we will be able to understand your needs in more detail. If you would prefer to provide information or suggestions in a different format, then you are free to do so.

Ofcom strongly prefers to receive responses using the online web form at <http://stakeholders.ofcom.org.uk/consultations/call-for-input/howtorespond/>, as this helps us to process the responses quickly and efficiently. If replying by post, would you please circle those answers that offer numerical selection.

### General Questions [c1]

Q1. *What future uses might this spectrum support?*

Q2 *What implications might these possible future uses have for the way in which this spectrum is configured in terms of transmit powers, bandwidth and geographic coverage? For example:*

- *Could these possible future uses be accommodated under the existing Business Radio licence products? If so, would they need the channel widths of the existing Business Radio licence products to be increased above 25 kHz ?*
- *Alternatively, would they require an entirely new licence product to be developed?*
- *Do you think that we should allocate (at least) some of this spectrum for licence exempt use?*
- *If (at least a part of) this spectrum is made available for use under the existing Business Radio licence products, do you think that more spectrum should be allocated for light licence products as against technically assigned or area defined products?*

Q3 *What factors should Ofcom take into account in deciding how to make this spectrum available (both in terms of the choice of release mechanism and in terms of the timing and speed of release)?*

## Questions about prospective use of this spectrum (if relevant)

### Characteristics of prospective use

Q4 *What total bandwidth in megahertz (MHz) would you require to operate the prospective service (whether the authorisation is provided under licence or is licence exempt)? (eg. if answering 25KHz, please make clear if this is 1 x 25 kHz or 2 x 12.5 kHz)*

Q5 *Would this bandwidth need to be contiguous?*

*If so, please explain why your service requires contiguous blocks only.*

*If not, what would be the size of individual channels within the overall bandwidth?*

Q6 *If you think the prospective use would be suitable for licence exemption, please indicate the transmit power levels you are likely to require.*

Q7 *In which geographic area are you likely to use the spectrum (eg. UK Wide, Regional, Conurbations, Rural)*

Q8 <sup>[c2]</sup> *Please give a brief description of the technology (ies) that you will be using with the spectrum that you license.*

### Licensing Requirements

Q9 *Would you require a minimum licence tenure for you to consider operating your service? If so, how long (in years) would you want this minimum licence tenure to period to be (noting that you might need to pay for the full minimum tenure period on licence issuance)?*

Q10. *As explained in section 2, the existing [Business Radio licence](#) products are currently made available in bandwidths of 6.25, 12.5 or 25kHz, although it would be possible to make them available in larger bandwidths where there is enough spectrum to enable this (as is the case with this newly available Mid Band VHF spectrum). In light of this, would your prospective use of this newly available Mid Band VHF spectrum:*

*Be possible using one of the existing Business Radio licence products in the currently available bandwidths (of 6.25, 12.5 or 25kHz)?*

*Be possible using one of the existing Business Radio licence products, but in a bandwidth greater than 25 kHz (but with other licence conditions remaining as now)?*

*Require a new type of licence*

*Require licence exemption*

*Don't know*

Q11. *If your prospective use of this newly available Mid Band VHF spectrum would be possible using one of the existing Business Radio licence products, which existing licence product would it require?*

*Simple Site*

*Simple UK*

*Suppliers Light*

*Technically Assigned*

*Area Defined*

*If your proposed use is Technically Assigned please indicate if the use will be shared or exclusive*

#### ***Impact on existing licence holdings***

Q12. *Which existing Business Radio licence type do you currently hold? (Circle each licence type that applies.)*

*Simple Site*

*Simple UK*

*Suppliers Light*

*Technically Assigned*

*Area Defined*

*Combination of the above*

*None*

*Don't know*

Q13. *Would additional spectrum allow you to consolidate existing assignments? (If so, please provide information on the assignments that you may hand back to Ofcom as a result of consolidation)*

Q14. *Do you have any further comments*

Spectrum Call for input

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