



Broadcast Digital Radio Technical Codes and Guidance

Consultation on updates and amendments

Consultation

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Section 1

Introduction

Overview

- 1.1 Ofcom's Digital Radio Technical Code and accompanying Guidance Note set out the high level requirements with which radio multiplex licensees are required to comply as a condition of their multiplex licences. The documents are in place to ensure that licensed services achieve at least a minimum standard of technical quality, do not cause interference to other licensed services and seek to ensure interoperability with other services and receivers.
- 1.2 One of Ofcom's aims is to regulate only where necessary. The Code and Guidance Note were last revised in 2006 and since that time, there have been changes in both technology and the landscape of the radio industry. We therefore feel it is appropriate that Ofcom reviews the requirements set out in the Digital Radio Technical Code and associated documentation and assesses the purpose, value and relevance of each of the requirements taking into account our relevant duties.
- 1.3 The purpose of this consultation is to set out the revisions that we propose to make to the Code and associated documents, in order to take into account technical developments and industry practices since 2006. We are consulting on these technical matters ahead of the advertisement of a new national and local radio multiplex licences that we anticipate occurring from mid-2014. Applicants for the licences will therefore be able to take into account the proposed changes to the Code and associated documents when compiling their applications. Some of the licence obligations also form criteria against which applicants for the new licences will be assessed.
- 1.4 New and existing licensees will be required to comply with the revised Digital Radio Technical Code, a draft copy of which is published alongside this consultation.
- 1.5 There are four documents¹ that are contained within the scope of this consultation:
 - Digital (Radio) Technical Code
 - Technical Policy Guidance for DAB Multiplex Licensees
 - Reserved Assignments List (RAL)
 - Memorandum of Understanding between Ofcom and Multiplex operators on use of non-RAL sites

We hope that consulting on all these matters now will provide certainty and clarity for the new multiplex licensees, as well as for other existing operators and any potential future entrants to the market.

¹ Technical Policy documents are available on Ofcom's website at:
<http://stakeholders.ofcom.org.uk/broadcasting/guidance/tech-guidance/digital/>

Background

- 1.6 The first commercial national DAB multiplex licence was awarded in 1999 and is held by Digital One Ltd (D1), a subsidiary of Arqiva. In December 2006 a second national DAB multiplex licence was advertised and subsequently awarded in 2007 to 4 Digital Group Ltd (4DG), a consortium led by Channel 4. The service did not however launch. Following market testing by Ofcom and in view of the prevailing economic and industry conditions, Ofcom decided not to re-advertise the licence at that time.
- 1.7 Since then, there have been a number of developments in technology, industry and the radio market. Taking these into account, the Government announced on 16th December 2013, a package of digital radio investment measures aimed at giving more people access to more digital radio services. One of the measures announced was that Ofcom would seek to advertise a licence to build and run a second commercial national DAB multiplex.

Legislative background

- 1.8 Ofcom's general duties and powers are set out in section 3 of the Communications Act 2003. In addition to these provisions, Ofcom also has duties and powers that relate specifically to radio multiplex licensing that are set out in the Broadcasting Act 1996.
- 1.9 Ofcom has a wide discretion to include in radio multiplex licences such conditions as appear to Ofcom to be appropriate having regard to any duties that Ofcom or the licensee has under the Broadcasting Acts of 1990 and 1996, or the Communications Act 2003². Ofcom also has a specific power to include conditions enabling Ofcom to supervise and enforce technical standards in connection with the provision of the licensed service³.
- 1.10 Section 54 of the Broadcasting Act 1996 requires Ofcom to secure particular aims by imposing appropriate conditions in radio multiplex licences.

Structure of this document

- 1.11 The published Technical Codes are derived from Ofcom's general duties, as well as those powers that relate specifically to the delivery of the radio multiplex service. Having reviewed those Codes and related documents, we have identified a number of areas within the documents that we consider should be revised prior to advertising a new national or local radio multiplex licence. Our proposals for those revisions are set out in the rest of this document as follows:
- in Section 2 we set out our proposals for including provisions within the Technical Codes for the DAB+ encoding system;
 - in Section 3 we set out our proposals for revising our planning standards in light of guidance that we proposed in the development of switchover plans for Government;

² Section 43(1)(a) of the Broadcasting Act 1996

³ Section 43(1)(b) of the Broadcasting Act 1996

- in Section 4 we propose a substantial revision of our policy relating to approving transmitter proposals, setting out a new methodology for approving transmitter characteristics before they can be brought into service;
- in Section 5 we set out our proposals in relation to the allocation of capacity to individual programme services and the resulting sound quality. In this section we also set out proposals for multiplex allocation within multiplexes as it relates to bitrate requirements; and
- Section 6 sets out our proposed revision in relation to our multiplex management policy and the inclusion of TA/TP (traffic announcement / traffic programming) travel flags as part of the service.

Section 2

Introduction of alternative audio encoding: DAB+

Background

- 2.1 Digital broadcasting systems employ methods for reducing the bitrate needed to carry services to levels that make it economic to transmit them - this is called compression. For example, an uncompressed stereo audio service requires a bitrate of over 1 Mbit/s which would fill an entire DAB multiplex.
- 2.2 The DAB system incorporates a method known as MPEG1 Layer 2 (MP2) audio encoding for compressing the audio content down to more manageable levels to permit several services to be fitted into a multiplex. The rates for stereo services are somewhere in the range 112 kbit/s -192 kbit/s.
- 2.3 MP2 was developed in the late 1980s and more efficient encoding techniques have been developed in the intervening years. One example of a more efficient system is 'High Efficiency Advanced Audio Coding' or HE-AAC. HE-AAC reduces the bitrate required to support a stereo audio service to around half that of MP2.
- 2.4 Use of HE-AAC encoded services within a DAB multiplex has been termed DAB+. The benefits of DAB+ are that it enables audio services to be broadcast at a higher sound quality for a given bitrate than MP2 or to fit additional services into a multiplex at a lower bitrate than MP2 but with equivalent quality. This provides the opportunity to carry many more services and/or better audio quality for services operating in the same spectral occupancy.
- 2.5 In our 2007 consultation *The Future of Radio*⁴ we said that adoption of DAB+ could be desirable if this was the future direction of DAB across the world. DAB+ is now being adopted in many countries across Europe as well as Australia and other parts of the world.
- 2.6 While adoption of DAB+ could offer significant benefits, any introduction would have to be carefully managed as radio services broadcast using DAB+ would only be compatible with DAB+ radio sets and not earlier DAB-only receivers. One very positive step is that in December 2013, the Government confirmed that Digital Radio UK (DRUK) would be pursuing talks with industry to agree a standard that would ensure certainty for consumers when purchasing digital radio sets so that they are clear about whether their equipment is capable of receiving DAB+ services.
- 2.7 It is likely that a complete change to DAB+ in the UK would be a longer term transition that would take into account the installed base of DAB-only receivers in the UK and the current relatively low level of penetration of sets that are compatible with DAB+. It is however likely to be beneficial to include the DAB+ standard into the Digital Code and to permit its limited deployment now and therefore enable the future wider adoption of the technology in the UK.

⁴ <http://stakeholders.ofcom.org.uk/binaries/consultations/futureradio/summary/future.pdf>

Proposal

2.8 As part of our revision of the Digital Radio Technical Code, we are proposing including DAB+, with two main aims:

- to provide the opportunity for services on the second national radio multiplex to broadcast using DAB+ if they so desire (although this will not be mandatory); and
- to signal to industry that it is important that receivers incorporate the capability to receive DAB+ services in order that their products are as prepared for the future as possible.

Adoption of DAB+

2.9 We intend inviting applications for the second national radio multiplex licence in the second quarter of 2014. We propose that that this multiplex be given flexibility to carry DAB or DAB+ services, or a mixture of both. We propose that the proportion of multiplex capacity occupied by DAB+ services should be initially limited to 30% of the total available multiplex capacity, so as to ensure that the multiplex provides programme services which are compatible with the DAB receivers owned by all UK consumers, yet provides a clear signal to industry that DAB+ is an emerging technology and that products will need to incorporate it in order to remain compatible with radio services in the future. We further propose to review that limit as the DAB/DAB+ market develops.

2.10 Inclusion of DAB+ in the Digital Radio Technical Code does not provide consent for services on existing multiplexes to switch to DAB+. Ofcom would however consider requests for services to switch to DAB+ from operators of existing multiplexes, taking into account the reasons for the request and the potential impact upon listeners that such a change would entail.

Question 1: *Do you agree with our proposals for amending the Digital Radio Technical Code in relation to DAB+? Do you have any views on how we propose its use will be permitted?*

Section 3

Planning standards: wanted coverage and interference protection

Background

- 3.1 One of the statutory criteria that Ofcom is required to take into account in deciding whether and to whom to award a multiplex licence is the extent and speed of coverage rollout.
- 3.2 The approach set out in 2006 when the Technical Code and Guidance Note were last revised, was based upon dividing the UK into 100m x 100m squares (or 'pixels') and predicting the median signal strengths that a service puts into each square. The thresholds were:
 - 58 dB μ V/m representing the minimum for outdoor/mobile reception; and
 - 65 dB μ V/m representing the minimum for indoor reception.
- 3.3 The calculations were carried out assuming a receiving aerial 10m above the ground.

Proposal

- 3.4 In 2010, the Government published a Digital Radio Action Plan⁵ (DRAP), the purpose of which was 'to provide the information to allow for a well-informed decision by Government on whether to proceed with a radio switchover'.
- 3.5 Ofcom was asked to chair a DAB coverage and spectrum planning group to determine the current level of FM coverage and develop a range of options to increase DAB coverage to match FM.
- 3.6 In carrying out this work, it became apparent that a revised set of assumptions and thresholds would need to be developed for planning the coverage of DAB services, as most reception of radio services is through in-car receivers or on radios using set-top aerials. These revised assumptions were published in our May 2012 Report to Government on DAB Coverage Planning⁶.
- 3.7 The revisions can be summarised as below:
 - 3.7.1 amendment to the threshold for outdoor /mobile reception to 54 dB μ V/m;
 - 3.7.2 refinement of the method used to predict indoor reception, notably introduction of different parameters for building penetration loss for urban and dense urban areas;

⁵ Government's Digital Radio Action Plan:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/270375/Digital_Radio_Action_Plan_v10_5_.pdf

⁶ DAB Coverage Planning – Report to Government 2 May 2012 :
<http://stakeholders.ofcom.org.uk/broadcasting/radio/coverage/dab-coverage/>

- 3.7.3 introduction of 'robust' and 'useful' indoor reception quality classifications; and
- 3.7.4 introduction of a revised proportional counting method for indoor coverage.
- 3.8 Full details of the revised thresholds are set out in the draft Digital Radio Technical Code and Guidance Note that have been published alongside this consultation.
- 3.9 In conclusion, we propose to align our planning standards with those that form the basis of our advice to Government⁷ and to remove the requirement to constrain coverage to specific editorial areas.

Question 2: *Do you have any comments in relation to our proposals to amend the planning standards?*

Choice of Error Protection level

- 3.10 A DAB multiplex is a flexible means of delivering programme services to listeners. As well as programme services the multiplex contains certain error correction data that enables receivers to compensate for the effects of errors that are introduced by interference and other distortions between the transmitter and receiver.
- 3.11 There are choices to be made by multiplex operators to balance the amount of multiplex capacity allocated to error correction and to programme services. Devoting a larger proportion of capacity to error correction will lead to a more robust signal and therefore greater coverage, whereas a smaller proportion will permit more programme services to be accommodated but at the cost of lost coverage.
- 3.12 Several levels of error protection are specified in the DAB system. Unequal Error Protection (UEP) level 1 provides the highest level error protection. UEP 5 provides the least error protection but the greatest capacity for programme services.

Proposal

- 3.13 In order to ensure consistency when making coverage predictions, we propose that all DAB coverage assessment will be carried out on the basis of UEP3 being used. We therefore propose to amend the Digital Radio Technical Code to require that unless otherwise agreed with Ofcom, all transmissions will use UEP3 for audio and UEP 3-A for data services. The DAB+ standard does not support unequal error protection and all services are transmitted with equal error protection (EEP). Consequently Ofcom proposes that all DAB+ transmissions must use EEP3.
- 3.14 Where licensees apply to use UEP 1 or 2 this may be agreed by Ofcom on a case by case basis. However, licensees should be aware that if at a later date the licensee wishes to reduce the level of error protection Ofcom may require that any resulting loss of coverage (and therefore listener disenfranchisement) is addressed by the addition of new transmitter(s).
- 3.15 As UEP 3 forms the basis of our coverage planning and interference assessment criteria unless already agreed with Ofcom, we will not allow services to reduce the

⁷ DAB coverage planning, Ofcom Report to Government, Appendix E, Technical Parameters & Algorithms: http://stakeholders.ofcom.org.uk/binaries/broadcast/radio-ops/coverage/Annex_E.pdf

UEP used (i.e. to UEP 4 or 5) below this level. This is to ensure a consistent user experience and stability for the receiver market.

Question 3: *Do you have any comments on our proposed approach to Unequal Error Protection and Equal Error Protections?*

Section 4

Approval of transmitter proposals

Background

- 4.1 Before the transmitters of a multiplex can be brought into service, the location and characteristics of each individual transmitter needs to be agreed by Ofcom. The three principal reasons for this are to ensure that:
- there is not a disproportionate loss of coverage to a DAB multiplex in another part of the UK due to co-channel interference;
 - there is not a significant impact on the reception of other DAB services in the vicinity of the proposed transmitter due to Adjacent Channel Interference; and
 - the service is correctly licensed under the Wireless Telegraphy Act.
- 4.2 Unlike television broadcasting where the multiplexes carry predominantly UK-wide programmes and broadcast from the same transmission sites, radio is more locally targeted and the national and local services often make use of different transmitter sites. This can give rise to a phenomenon known as Adjacent Channel Interference (ACI) where households and radios in cars travelling on roads close to the transmitter of one broadcaster are unable to receive services from another, because their radio sets are affected by the much stronger signals from the transmitter near them.
- 4.3 The problem of ACI has been long recognised and there are two key documents that aim to manage the impact of ACI and underpin the approvals process:
- Reserved Assignments List (RAL): a list of transmitter sites and associated characteristics within which any licensee may expect to be able to secure Ofcom's agreement to develop, subject to compliance with all other requirements of the licence; and
 - Memorandum of Understanding (MoU): an MoU between Ofcom and Multiplex operators on use of non-RAL sites – provides guidance on how ACI impacts will be assessed and dealt with if using a transmitter site that is not contained in the RAL.
- 4.4 In considering applications by a licensee for a new transmitter site, Ofcom will consider whether and to what extent the transmitter will punch 'holes' in the coverage of other multiplexes predicted to provide a service in the same area.
- 4.5 If a licensee wishes to make use of a transmission site that is not on the RAL, the MoU with industry sets the terms for assessing and dealing with the impact on other multiplexes. Where the impact is expected to be very large, this may require the installation of a low power 'filler' transmitter for the affected service(s).

Proposal

- 4.6 The MoU was agreed in 2006 while Ofcom and industry's understanding of the actual real world impact of ACI was still relatively immature. Work carried out subsequently,

as well as practical experience in relation to ACI, suggests that the present methodology significantly over-predicts the real impact of new sites.

- 4.7 The radio industry has also changed and we now have a better understanding of the coverage that is likely to be ultimately achieved by the DAB multiplex licensees and the transmission sites they will probably use. For example, The BBC has announced an extensive programme of works building out 162 additional sites in order to achieve approximately 97% coverage.
- 4.8 Furthermore, in accordance with Government policy, local DAB multiplexes will be enhanced by around 200 new sites along with 35 new sites for the Digital One commercial national multiplex. As a result, a large number of non-RAL transmitter sites will be required alongside a more pragmatic approach to dealing with potential ACI impacts.
- 4.9 Ofcom has discussed roll-out plans with the commercial DAB multiplex operators and the BBC through the Ofcom-chaired Joint Planning for Radio Group (JPRG). All of the participants have indicated a desire to move to a more streamlined approach to dealing with ACI. The fundamental principle agreed by the JPRG members is that the multiplex operators be given freedom to coordinate their roll out plans and manage the impact of ACI that might arise from new transmitter sites through liaison amongst themselves.
- 4.10 Ofcom would however still need to approve proposals and would take into account the potential impact upon listeners where ACI is predicted to occur. Ofcom would also be the body to make decisions on a proposed site if the DAB multiplex operators are unable to come to agreement.
- 4.11 We therefore propose (with industry agreement) to dissolve the MoU and to adopt a new process for site approval. We have set out in the draft Technical Guidance Note published alongside this consultation the process that we envisage site approval will follow.
- 4.12 We propose that the RAL will be replaced by a list of agreed 'reference' sites based upon the roll-out plans of the multiplex operators following an assessment of ACI impact. We will work to assess and approve requests for bringing new transmitters into service through the JPRG and maintain an updated reference sites list with the RAL as its historical basis.

Question 4: *Do you agree with our proposals in relation to management of Adjacent Channel Interference?*

Section 5

Capacity allocation

Background

- 5.1 A DAB multiplex is a flexible delivery mechanism that permits choices to be made in trading-off the number of services (audio or data) fitted into the multiplex and the amount of multiplex capacity (bitrate) allocated to each of those services. Providers of radio services are able to negotiate with multiplex operators for access to an amount of multiplex capacity that is appropriate to their service and budgetary constraints.
- 5.2 At present, our Technical Code allows multiplex licensees to choose between two approaches to multiplex capacity allocation with the aim of securing a minimum standard of sound quality to listeners:
- to apply to sound programme services the minimum bitrate requirements specified in the Digital Technical Code; or
 - to adopt a flexible approach, where the licensee is responsible for determining the bitrate appropriate to individual programme services if they can demonstrate to Ofcom that generally high standards of technical quality will be maintained for the programme services affected.
- 5.3 The sound quality of a sound broadcasting service delivered to listeners is a result of several contributory factors. These include:
- the quality of the original source material;
 - the type of audio material which is being conveyed and its characteristics (for example whether it is speech or music and whether it is mono or stereo);
 - the extent to which that material has previously been subject to capacity-saving techniques in its generation, compilation, storage, retrieval, and transmission to the point of multiplexing;
 - the sophistication and set up of the coding equipment used; and
 - the bitrate with which it is transmitted.
- 5.4 Ofcom's general approach to regulation of technical matters is to apply requirements to 'outputs' (ie the service as delivered to consumers) rather than to 'inputs' such as how a service is assembled upstream of transmission, as these decisions are best made by the industry. We therefore regard the quality of audio as originated and supplied to the multiplex operator as being a matter for the sound programme service licensee to control and agree with the multiplex operator.
- 5.5 As noted above, there are several contributing factors that determine the sound quality delivered to the listener. Mandating minimum bitrates can only address part of the transmission chain and therefore the bitrate allocated to a service does not in itself guarantee that a particular quality will be achieved.

- 5.6 We have also considered whether the current approach to regulation of sound quality is appropriate against the background of cross-platform competition and rapid technological change.
- 5.7 Analogue radio services are not subject to any form of sound quality regulation.
- 5.8 The Digital Terrestrial Television (DTT) platform is technically very similar to DAB and also operates under a similar legislative framework. Although DTT multiplex services are subject to some technical requirements that seek to ensure interoperability, there are no mandatory minimum bitrates for the sound or vision components of the multiplex⁸. The platform is the main delivery mechanism for TV services to around 40% of households in the UK with no evidence of significant dissatisfaction in relation to technical quality from consumers.
- 5.9 Digital satellite and cable services are between them the main delivery mechanisms for TV services to approximately 60% of UK households. They operate free of any regulatory technical constraints (other than those in place to prevent interference) and again there is no evidence of significant levels of dissatisfaction with technical quality from customers.
- 5.10 We have considered the approach to regulation of sound quality. Our conclusions are as follows:
- a) firstly, a radio service can be carried on any platform other than DAB (ie analogue, DTT, satellite, cable or internet) and not be subject to any regulatory requirement in relation to sound quality;
 - b) secondly, there is no evidence to suggest dissatisfaction from consumers with the technical quality of content from platforms that are not subject to explicit technical quality standards requirements; and
 - c) mandating of minimum bitrates is a relatively ineffective measure of seeking to ensure a given sound quality.
- 5.11 Our conclusion is that competition between services and increasingly from other media will in general provide an adequate form of self-regulation in matters of sound quality without significant further intervention.

Proposal

- 5.12 We therefore propose to remove the minimum bitrate requirement as it is at best only a partially effective measure in relation to assuring sound quality and is inconsistent with other platforms that continue to deliver at standards that are consistent with the expectations of consumers.
- 5.13 We therefore propose that multiplex licensees and sound service providers be given flexibility to determine the bitrate appropriate to individual programme services carried within DAB multiplexes. In order to frame those decisions, Ofcom's expectations for the sound quality for the services carried within a DAB multiplex service will be included in the Digital Radio Technical Code. This Code will be

⁸ On the DTT platform there are requirements applying very specifically to commercial PSB services only, which are required to achieve specific picture and sound quality standards – this requirement is identified for review in Ofcom's draft annual plan.

amended to incorporate guidance formerly set out in Ofcom's Policy Guidance Note for DAB Multiplex Licensees:

“Ofcom regards the basic quality of audio as originated and supplied to the multiplex operator as being a matter for the sound programme service licensee to control and agree with the multiplex operator.

Audio quality should generally be of a standard consistent with reasonable expectations for the majority of listeners, taking into account the nature of the content and the sound programme service concerned. Factors relevant to expectations may include the target audience, and the quality with which the service concerned may be delivered on other platforms.”

- 5.14 Licences will continue to include as a backstop measure a general condition that requires that the service provided by a licensee achieves generally high standards of technical quality.

Question 5: *Do you agree with our proposals for amending the Digital Radio Technical Code in relation to multiplex capacity allocation? Do you have any alternative suggestions?*

Section 6

Multiplex management – supplementary signalling

Background

- 6.1 Ofcom's guidance on multiplex management policy is directed at two principal objectives:
- accommodating practical considerations in securing compliance with statutory limits on use of multiplex capacity (i.e. no more than 30% of capacity may be used for services other than sound programme services); and
 - ensuring that the various multiplex signalling and overhead codes used for features such as cross-linking between multiplexes, programme name labelling, and so on are used consistently to deliver a satisfactory experience to listeners.

Proposal

- 6.2 In relation to the second objective we are proposing to include provision within the Digital Radio Technical Code to place certain requirements on DAB multiplexes that choose to provide travel information for their listeners and to make use of traffic announcement/traffic programme (TA/TP) travel flags as part of the service.
- 6.3 The TA/TP flags are small pieces of data that can be included in a DAB (or FM radio RDS) data stream and are used by broadcasters to signal to compatible receivers that particular radio services carry travel news and are used as follows:
- 6.3.1 a radio service that broadcasts a Travel Programme (TP) flag is indicating that it carries travel news during at least some of its programmes;
- 6.3.2 a radio service that broadcasts a Travel Announcement (TA) flag is indicating that it is actually broadcasting a travel news announcement; and
- 6.3.3 a radio service raising a TA flag will cause car radios that have chosen to receive travel announcements to switch to the radio station that is putting out the travel announcement even if they were previously playing a CD or were tuned to other radio services if these are linked.
- 6.4 The requirements we propose putting into our Code will mirror those already in place for FM services and are in summary:
- 6.4.1 use of TA/TP is not mandatory;
- 6.4.2 if radio services do make use of TA/TP, then they must have the capability of dynamically and accurately switching on the TA flag when a travel announcement commences and switching it off promptly when the announcement has completed; and
- 6.4.3 the TP flag should not be raised if the service does not carry travel information announcements.

- 6.5 The proposed approach for DAB will therefore align with our existing policy for FM services meaning that listeners with in-car DAB or DAB+ receivers will be able to receive a traffic and travel announcement service where provided by a radio station if they choose to enable that feature.
- 6.6 As part of its Digital Radio Action Plan (DRAP) the Government published a document entitled, *Minimum specifications for DAB and DAB+ in-vehicle digital radio receivers and adaptors*.⁹ That document sets out the minimum in-vehicle specification for manufacturers so that consumers can be assured of the performance standard of receivers when making purchases.
- 6.7 We have liaised with a range of stakeholders prior to this consultation and understand that many vehicle radio manufacturers and radio broadcasters are supportive of the introduction of dynamically switched travel information services.
- 6.8 We have not been made aware of any issues that could affect implementation of these proposals. We further understand that the industry is working to put in place the technical capability to dynamically switch the TA/TP flags during the second half of 2014 and are therefore satisfied that it is appropriate to make changes to the Technical Code at this time

Question 6: *Do you agree with our proposals in relation to the management of TA/TP features on DAB? We are particularly interested to hear any views on issues that could affect implementation of these proposals.*

Question 7: *Do you have any additional comments on either the draft Digital Radio Technical Code or Technical Policy Guidance note?*

Question 8: *Do you have any other comments to make on any of the matters raised in this consultation?*

⁹ Government minimum receiver specification:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/207937/Domestic_Min_Spec_v1.1_revisedJune13_.pdf

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 Friday 23 May 2014**.
- A1.2 Ofcom strongly prefers to receive responses using the online web form at <http://stakeholders.ofcom.org.uk/consultations/digital-radio-tech-codes/howtorespond/form>, 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: BroadcastDigitalRadio.TechnicalCodes&Guidance@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.
- Ruth John
Ofcom
Spectrum Policy Group
Riverside House
2A Southwark Bridge Road
London SE1 9HA
- 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 ruth.john@ofcom.org.uk

Confidentiality

- A1.8 We believe it is important for everyone interested in an issue to see the views expressed by consultation respondents. We will therefore usually publish all responses on our website, www.ofcom.org.uk, ideally on receipt. If you think your response should be kept confidential, can you please specify what part or whether

all of your response should be kept confidential, and specify why. Please also place such parts in a separate annex.

- A1.9 If someone asks us to keep part or all of a response confidential, we will treat this request seriously and will try to respect this. But sometimes we will need to publish all responses, including those that are marked as confidential, in order to meet legal obligations.
- A1.10 Please also note that copyright and all other intellectual property in responses will be assumed to be licensed to Ofcom to use. Ofcom's approach on intellectual property rights is explained further on its website at <http://www.ofcom.org.uk/about/accoun/disclaimer/>

Next steps

- A1.11 Following the end of the consultation period, Ofcom intends to publish a statement in June 2014.
- 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

Ofcom's consultation processes

- A1.13 Ofcom seeks to ensure that responding to a consultation is easy as possible. For more information please see our consultation principles in Annex 2.
- A1.14 If you have any comments or suggestions on how Ofcom conducts its consultations, please call our consultation helpdesk on 020 7981 3003 or e-mail us at consult@ofcom.org.uk . We would particularly welcome thoughts on how Ofcom could more effectively seek the views of those groups or individuals, such as small businesses or particular types of residential consumers, who are less likely to give their opinions through a formal consultation.
- A1.15 If you would like to discuss these issues or Ofcom's consultation processes more generally you can alternatively contact Graham Howell, Secretary to the Corporation, who is Ofcom's consultation champion:

Graham Howell
Ofcom
Riverside House
2a Southwark Bridge Road
London SE1 9HA

Tel: 020 7981 3601

Email: Graham.Howell@ofcom.org.uk

Annex 2

Ofcom's consultation principles

A2.1 Ofcom has published the following seven principles that it will follow for each public written consultation:

Before the consultation

A2.2 Where possible, we will hold informal talks with people and organisations before announcing a big consultation to find out whether we are thinking in the right direction. If we do not have enough time to do this, we will hold an open meeting to explain our proposals shortly after announcing the consultation.

During the consultation

A2.3 We will be clear about who we are consulting, why, on what questions and for how long.

A2.4 We will make the consultation document as short and simple as possible with a summary of no more than two pages. We will try to make it as easy as possible to give us a written response. If the consultation is complicated, we may provide a shortened Plain English Guide for smaller organisations or individuals who would otherwise not be able to spare the time to share their views.

A2.5 We will consult for up to 10 weeks depending on the potential impact of our proposals.

A2.6 A person within Ofcom will be in charge of making sure we follow our own guidelines and reach out to the largest number of people and organisations interested in the outcome of our decisions. Ofcom's 'Consultation Champion' will also be the main person to contact with views on the way we run our consultations.

A2.7 If we are not able to follow one of these principles, we will explain why.

After the consultation

A2.8 We think it is important for everyone interested in an issue to see the views of others during a consultation. We would usually publish all the responses we have received on our website. In our statement, we will give reasons for our decisions and will give an account of how the views of those concerned helped shape those decisions.

Annex 3

Consultation response cover sheet

- A3.1 In the interests of transparency and good regulatory practice, we will publish all consultation responses in full on our website, www.ofcom.org.uk.
- A3.2 We have produced a coversheet for responses (see below) and would be very grateful if you could send one with your response (this is incorporated into the online web form if you respond in this way). This will speed up our processing of responses, and help to maintain confidentiality where appropriate.
- A3.3 The quality of consultation can be enhanced by publishing responses before the consultation period closes. In particular, this can help those individuals and organisations with limited resources or familiarity with the issues to respond in a more informed way. Therefore Ofcom would encourage respondents to complete their coversheet in a way that allows Ofcom to publish their responses upon receipt, rather than waiting until the consultation period has ended.
- A3.4 We strongly prefer to receive responses via the online web form which incorporates the coversheet. If you are responding via email, post or fax you can download an electronic copy of this coversheet in Word or RTF format from the 'Consultations' section of our website at www.ofcom.org.uk/consult/.
- A3.5 Please put any parts of your response you consider should be kept confidential in a separate annex to your response and include your reasons why this part of your response should not be published. This can include information such as your personal background and experience. If you want your name, address, other contact details, or job title to remain confidential, please provide them in your cover sheet only, so that we don't have to edit your response.

Cover sheet for response to an Ofcom consultation

BASIC DETAILS

Consultation title:

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 questions

Question 1: *Do you agree with our proposals for amending the Digital Radio Technical Code in relation to DAB+? Do you have any views on how we propose its use will be permitted?*

Question 2: *Do you have any comments in relation to our proposals to amend the planning standards?*

Question 3: *Do you have any comments on our proposed approach to Unequal Error Protection and Equal Error Protections?*

Question 4: *Do you agree with our proposals in relation to management of Adjacent Channel Interference?*

Question 5: *Do you agree with our proposals for amending the Digital Radio Technical Code in relation to multiplex capacity allocation? Do you have any alternative suggestions?*

Question 6: *Do you agree with our proposals in relation to the management of TA/TP features on DAB? We are particularly interested to hear any views on issues that could affect implementation of these proposals.*

Question 7: *Do you have any additional comments on either the draft Digital Radio Technical Code or Technical Policy Guidance note?*

Question 8: *Do you have any other comments to make on any of the matters raised in this consultation?*

Annex 5

Impact Assessment

Introduction

- A5.1 The analysis presented in this section represents an impact assessment, as defined in section 7 of the Communications Act 2003 (the Act).
- A5.2 You should send any comments on this impact assessment to us by the closing date for this consultation. We will consider all comments before deciding whether to implement our proposals.
- A5.3 Impact assessments provide a valuable way of assessing different options for regulation and showing why the preferred option was chosen. They form part of best practice policy-making. This is reflected in section 7 of the Act, which means that generally we have to carry out impact assessments where our proposals would be likely to have a significant effect on businesses or the general public, or when there is a major change in Ofcom's activities. However, as a matter of policy Ofcom is committed to carrying out and publishing impact assessments in relation to the great majority of our policy decisions. For further information about our approach to impact assessments, see the guidelines, Better policy-making: Ofcom's approach to impact assessment, which are on our website:
http://www.ofcom.org.uk/consult/policy_making/guidelines.pdf

The citizen and/or consumer interest

- A5.4 Radio listeners that make use of the DAB platform should benefit from the changes being proposed by Ofcom through an increase in choice of the number of radio services that are available and also from extended coverage across the UK.

Ofcom's policy objective

- A5.5 The changes to Ofcom's Digital Radio Technical Code and associated documents are proposed with the aims of:
- Facilitating an increase in the coverage of DAB services through updating the methods by which coverage is planned and streamlining the process for dealing with adjacent channel interference
 - Enabling the introduction of a more advanced audio encoding standard which enables either a greater choice of services to be broadcast via DAB, and/or a better audio quality to be achieved within the existing spectrum occupancy
 - Paving the way for the addition of travel service features to DAB and adoption in a consistent way to their deployment on FM radio services
 - Aligning the regulatory approach to capacity allocation and quality with other broadcast platforms
- A5.6 We are proposing making the changes now so as to provide certainty for applicants in advance of advertising the second commercial national DAB multiplex licence later this year.

Options considered

- Make no change - retain existing Digital Radio Technical Code and associated documentation
- Update and amend the Digital Radio Technical Code and associated documentation
- Remove regulatory requirements completely

Analysis of the different options

Make no change

A5.7 Making no change to the current documents would result in them being inconsistent with the approach that was developed when reporting to Government on Digital Radio Switchover. Licensees and listeners would not be able to benefit from the introduction of the new technology and features proposed to be incorporated in our revised Code and Guidance.

Update and amend the Digital Radio Technical Code and associated documents

A5.8 Amending the Code and Guidance documents will permit DAB licensees to benefit from greater flexibility in the management of their multiplexes and the coverage that they achieve. Consumers should benefit from a greater choice of services available through the DAB platform and also from extended coverage that should be more swiftly achieved.

Remove regulation completely

A5.9 The Code and Guidance contain a number of requirements that are in place to prevent interference occurring and that seek to ensure that services interoperate and are compatible with receivers. Removing the requirements completely would provide licensees with greater freedom. However, this would also take away the safeguards for listeners in respect of consistency of coverage and compatibility of DAB services with receivers.

The preferred option

A5.10 Considering the factors above, the option of amending the Code and Guidance appears to provide the maximum benefit for citizens, consumers and licensees. We therefore propose proceeding with the option of reviewing and amending the Digital Radio Technical documents and consulting stakeholders on our proposed changes.

Equality Impact Assessment

A5.11 Ofcom is required by statute to assess the potential impact of all of its functions, policies, projects and practices on the following equality groups: age, disability, gender, gender reassignment, pregnancy and maternity, race, religion or belief and sexual orientation. Equality Impact Assessments (EIAs) also assist us in making sure that we are meeting our principal duty of furthering the interests of citizens and consumers regardless of their background or identity.

- A5.12 We have not identified any particular impact of our proposals in relation to the identified equality groups. Specifically, we do not envisage the impact of any outcome to be to the detriment of any particular group of society.
- A5.13 Nor have we seen the need to carry out separate EIAs in relation to the additional equality groups in Northern Ireland: religious belief, political opinion and dependants. This is because we anticipate that our proposals will not have a differential impact in Northern Ireland compared to consumers in general.

Annex 6

Draft revised Digital Radio Technical Code

See separate document published alongside this consultation.

Annex 7

Draft revised Technical Policy Guidance for DAB Multiplex Licensees

See separate document published alongside this consultation.