



Statement on content management on the HD Freeview platform

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Section 1

Summary

Background

- 1.1 This statement sets out Ofcom's decision on a proposal from BBC Free to View Ltd¹ (the "BBC") to vary the terms of its multiplex licence for Multiplex B. Under the BBC's proposals, its licence would be varied to allow it to restrict access to broadcast Electronic Programme Guide (EPG) data to only those High Definition (HD) Digital Terrestrial (DTT) receivers which include content management technology². This technology would enable broadcasters to control the multiple unauthorised copying of broadcast HD content and its retransmission over the internet.
- 1.2 The decision to include content management technologies in HD Freeview receivers was made by the Digital Television Group³ (DTG) prior to the BBC's proposal. However, compliance with the DTG specifications is not mandatory and the BBC's proposal to limit access to HD EPG data to receivers that implement the technology is intended to minimise the number of receivers that do not implement the technology.
- 1.3 Without this change, the BBC argues that the ability of broadcasters on the HD DTT platform to secure content from third party rights holders on similar terms to those on other platforms would be reduced, thus limiting the range of broadcast content available to viewers on the HD DTT platform.
- 1.4 Ofcom issued an initial consultation in September 2009⁴. Following receipt of responses to that consultation, Ofcom issued a second consultation on the BBC's request for licence amendment in January this year⁵ ("the Consultation") and a full assessment of responses is provided in sections 3, 4, 5 and 6 of this document.

Ofcom's assessment

- 1.5 Our aim in assessing the BBC's proposed licence amendment has been to determine whether this change would deliver net benefits to citizens and consumers by ensuring they have access to the widest possible range of HD television content on DTT, whilst not unduly restricting their ability to make use of content or the range of receiver equipment available in the DTT receiver market.
- 1.6 In response to the Consultation the BBC, ITV and Channel 4 provided confidential details on the acquired HD content that would be affected if an effective content management framework was not provided on the DTT platform, including the need to 'blank out' some HD content. This evidence was supported by the views expressed by representatives of rights holders. Based on this information, and the increasing use of content management on other digital TV platforms, we have concluded that the BBC's proposal would widen the range of HD content available on the DTT platform, in particular high value film and drama content, and that this would bring

¹ BBC Free to View Ltd is the holder of the Multiplex B licence used to deliver HDTV services on DTT.

² Content management is also commonly referred to as digital rights management (DRM).

³ The Digital Television Group (DTG) is a cross-industry body that draws up a specification for DTT equipment to ensure interoperability with broadcast services.

⁴ available at http://www.ofcom.org.uk/tv/ifi/tvlicensing/enquiry/ofcom_bbc.pdf

⁵ available at http://www.ofcom.org.uk/consult/condocs/content_mngt/condoc.pdf

positive benefits to citizens and consumers and also help ensure that the DTT platform is able to compete on similar terms with other digital TV platforms for HD content rights.

- 1.7 We have also considered whether the BBC's request for a licence amendment would impact negatively on the market for HD DTT receivers in terms of market distortion and price. We have concluded this would not be the case. The BBC is proposing to licence the intellectual property required to gain access to the HD EPG data (Huffman lookup tables) free of charge and major receiver and integrated digital TV manufacturers are including content management in their HD Freeview products. Hence the impact of the BBC proposals on the supply of receivers to the mass market is negligible.
- 1.8 A large number of individual responses to the Consultation highlighted that 'open source' software developers would be unable to develop receivers that access HD EPG data if they had to take a licence from the BBC in order to access it. We do not fully share this view. The BBC proposals do not prohibit the use of open source software in receivers, but we recognise the proposal may introduce some restrictions on how it is used. We anticipate that any such restrictions will have a negligible impact on the mass market for HD Freeview receivers as many manufacturers do not use open source software and in cases where they do can opt for an open source licence which is compatible with the BBC's proposed licensing arrangements.
- 1.9 In assessing the BBC's request for a licence amendment we have also considered whether this proposal is proportionate to the aim of ensuring that content management is present in receivers so as to ensure the broadest range of content on the HD DTT platform. Based on consultation responses and our own assessment we have concluded that measures which do not require a licence amendment (such as linking the licensing of the HD Freeview logo to content management) would not be sufficient to secure an effective content management framework. The BBC's proposal would ensure that an effective content management framework was in place and does not unduly restrict receiver manufacturers in their ability to produce marketable products and viewers in their ability to deal with content in the manner they consider appropriate. More intrusive alternatives to the approach proposed by the BBC, such as the full encryption of the programme content would be disproportionate to this aim as they would go further than the BBC proposal whilst not offering any additional viewer benefits.
- 1.10 A large number of individual consumer responses to the consultation expressed concerns that their ability to copy HD content broadcast on the DTT platform would be unduly restricted by the application of content management by broadcasters. It is important to note that Ofcom's role in relation to content management is limited. Ofcom's consideration of the BBC's proposal concerns whether or not it is appropriate to allow the BBC to restrict access to EPG data for the purposes of content management. The specific nature of that content management solution is not something over which Ofcom has been given statutory powers and it would be inappropriate for Ofcom to seek to extend its remit through the BBC proposal. However, we note that the BBC and the other PSB broadcasters have recognised consumer concerns and have set out a number of significant commitments towards protecting consumers' fair dealing of HD content. These include:
- That no content management restrictions will be placed on standard definition content delivered on the Freeview platform;

- An undertaking to respect current consumer ‘fair dealing’ rights for HD content and any future extension of these rights, such as those recommended in the Gowers Review of Intellectual Property;
- A commitment to establishing a process whereby viewers who believe their lawful usage of HD content is being impinged by the BBC’s use of content management can raise their concerns to the BBC, rather than having to write to the Secretary of State, which is the current practice;
- A commitment to work with the other public service broadcasters to create a ‘user friendly’ consumer guide to content management which would be published on their websites and made available to manufacturers and retailers;
- A commitment to facilitate discussions between broadcasters, manufacturers, relevant industry bodies and consumer groups to develop and implement a good practice framework for the use of content management on the HD Freeview platform.

Ofcom’s decision

1.11 Based on consultation responses and our own assessment of the evidence Ofcom has decided to grant the BBC multiplex licence amendment to allow it to broadcast EPG data in a restricted format, subject to the two following conditions:

- That the licence required by manufacturers to access broadcast programme data in their equipment is provided by the BBC on a charge free basis (as per the BBC proposal).
- That the BBC is only able to restrict the availability of broadcast programme data using the licence amendment for the purposes of securing an effective content management framework on the HD Freeview platform.

Section 2

Introduction

- 2.1 All HD services on the Digital Terrestrial Television (DTT) platform are currently broadcast on Multiplex B. This multiplex delivers HD services from BBC, ITV, Channel 4 and S4C (S4C is only available in Wales). The multiplex is licensed to and operated by the BBC.
- 2.2 The Multiplex B Licence currently includes a condition⁶ which requires the BBC to ensure that any EPG service is provided using technical standards and broadcast datastream formats which are made freely available. The BBC proposal would amend this condition to allow the BBC to make the provision of technical standards for the EPG datastreams associated with HD channels conditional upon the introduction of content management by receiver manufacturers. The technical standards would not therefore be freely available.
- 2.3 The BBC believes that unless rights holders have confidence that the content management framework available on the DTT platform is effective, broadcasters on this platform will be unable to secure HD content on similar commercial terms and similar time release windows as broadcasters on other platforms. It therefore argues that the licence modification is necessary in order to secure the interests of viewers in their ability to access the broadest range of content possible.
- 2.4 In order to place DTT broadcasters in what it believes to be better position to secure HD content from third party rights holders, the BBC has drawn up plans to provide a content management framework for the HD DTT platform. These plans involve restricting access to broadcast HD programme data to receivers which implement content management. This means that only receivers which implement content management can process broadcast programme data to provide a consumer EPG.
- 2.5 To restrict access to broadcast HD programme data, the BBC proposes to encode this data using Huffman Coding and to make the provision of the look-up tables needed to decode and hence make use of this data in receivers conditional upon receiver manufacturers including content management technology in their products.
- 2.6 In August 2009 the BBC wrote to Ofcom requesting that the Multiplex B licence be amended to allow restrictions on the availability of EPG data for the purposes of securing an effective content management framework.
- 2.7 On 3 September 2009 Ofcom published a letter asking stakeholders for their views on the BBC's proposal. This generated a large number of responses in particular from consumer groups and individual consumers who raised a number of potential consumer and receiver market issues that were not addressed in the letter. As a consequence of this, Ofcom requested additional information from the BBC on its proposal.
- 2.8 Ofcom received this additional information from the BBC in December 2009. In its submission, the BBC set out why it believed an effective content management framework would broaden the range of HD content on DTT, and hence would deliver benefits to citizens and consumers, and why the proposed licence amendment would represent the most proportionate means for securing these benefits. The BBC's

⁶ Condition 6(5) of the Multiplex B Licence.

submission also set out a number of proposed commitments towards safeguarding consumer 'fair dealing' rights set out in the Copyright Design and Patent Act.

- 2.9 On 22 January 2010 Ofcom published a second more extensive consultation (the "Consultation") on the BBC's proposal. The Consultation set out our provisional view that, subject to consultation responses, we were minded to accept the BBC's proposal for a licence amendment on the basis it this was likely to deliver net benefits to citizens and consumers.
- 2.10 Ofcom received 578 responses to the Consultation and this document summarises these responses, assesses whether it would be appropriate for Ofcom to grant the BBC its proposed licence amendment, and sets out our decision.
- 2.11 Section 3 considers whether an effective content management framework on the HD DTT platform would deliver benefits to citizens and consumers. Section 4 considers whether the BBC's proposed licence amendment represents a proportionate means of ensuring that content management is present in receivers so as to ensure the broadest range of content on the HD DTT platform. Section 5 considers whether the details of the BBC's proposals would meet the needs of different stakeholders and Section 6 considers other related issues raised by respondents to the Consultation.

Legal Framework

- 2.12 Under Part I of the Broadcasting Act 1996 ("the 1996 Act"), Ofcom has the power to grant licences to provide multiplex services. Ofcom's predecessor, the Independent Television Commission (ITC), granted a licence to the BBC to operate Multiplex B in 2002.
- 2.13 In granting the licence, Ofcom (and before it the ITC) has the power to impose such licence conditions as it considers appropriate, having regard to the duties imposed on it by the Broadcasting Act 1990, the 1996 Act and the Communications Act 2003 ("the 2003 Act")⁷. The Multiplex B licence therefore includes Condition 6(5) which provides that:

(5) The Licensee shall ensure that:

(i) any EPG Service included in the Licensed Service is provided using published technical standards which are freely available and have been standardised either by a recognised European Standardisation body or such other industry body as is recognised by Ofcom; and

(ii) details of the broadcast datastream formats to be used in the provision of such EPG Service are made freely available to receiver manufacturers and channel suppliers.

- 2.14 As a result, the BBC must ensure that technical standards and broadcast datastream formats relating to the EPG service provided by way of the multiplex are freely available. It would not be possible therefore for the BBC to restrict access to such data in the manner proposed.
- 2.15 Ofcom may vary the Multiplex B licence in accordance with section 3 of the 1996 Act where it has given the licence holder an opportunity to make representations to it

⁷ section 4(1)(a) of the 1996 Act.

about the variation. In principle, Ofcom may therefore vary Condition 6(5) to permit the BBC proposal.

2.16 In doing so, Ofcom will need to take into account the duties placed upon it by the 2003 Act. Under section 3(1) of the 2003 Act, Ofcom's principal duty, in carrying out its 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.

2.17 Of particular relevance in the present context, Ofcom has duties to:

- secure the availability throughout the United Kingdom of a wide range of television services which (taken as a whole) are both of high quality and calculated to appeal to a variety of tastes and interests (section 3(2)(c));
- have regard to the desirability of promoting competition in relevant markets (section 3(4)(b)); and
- have regard to the interests of consumers in respect of choice, price, quality of service and value for money (section 3(5)).

2.18 Ofcom has taken these factors into account in deciding whether or not to grant the licence modification proposed by the BBC. In doing so, Ofcom is mindful that it does not have a power to include conditions in the Multiplex B licence relating to content management *per se*. Ofcom may only include those conditions specified in the 1996 Act and those it considers appropriate, taking into account its duties in the Broadcasting Act 1990, the 1996 Act and the 2003 Act. None of those duties relates to the ability of viewers to deal with content once broadcast. Nor do they relate to the markets for receivers. In those circumstances, Ofcom could not impose a condition requiring content management nor could it expressly restrict the ability of a multiplex operator to implement content management.

2.19 In reaching its decision, Ofcom is mindful of the extent of its statutory powers in this area.

Section 3

The benefits of an effective content management framework to the HD Freeview platform

Introduction

- 3.1 The objective of the BBC proposal is to create an effective content management framework on the HD DTT platform. The BBC argues that an effective content management framework is needed to ensure that broadcasters on the platform can secure the widest possible range HD content from third party providers, which would deliver greater benefits to citizens and consumers and help maintain the platform's longer term attractiveness in relation to other digital TV platforms.
- 3.2 This section considers stakeholder views on whether an effective content management framework is needed on the HD DTT platform to deliver a wider range of HD content. Section 4 considers whether the BBC's proposal is the most appropriate approach for securing an effective content management framework on the HD DTT platform.

Summary of consultation document

- 3.3 The Consultation referred to the BBC's December 2009 submission to Ofcom (attached as annex 6 of the consultation document). That document set out the BBC's views that:
- Some rights holders would not supply certain HD content free to air on the DTT platform in early release windows unless an effective content management framework was in place. This would mean that some HD content may therefore only be made available on pay TV platforms or on pre-recorded media where content management is provided.
 - That an effective content management framework would increase UK investment in HD content production, as producers would be better able to secure additional revenue streams, such as Blu-ray sales.
 - That an effective content management framework would ensure that UK broadcasters are better able to secure HD co-production arrangements with other programme makers who seek to monetise the content outside of the UK.
 - That an effective content management framework would help in maintaining an equivalent range of free to air HD content on DTT as on other digital TV platforms, helping to maintain competition between platforms, thereby increasing consumer choice.
 - That the wider range of HD content enabled by an effective content management framework would drive consumer take-up of HD DTT receivers, creating economies of scale in manufacturing, thereby leading to increased supply and potentially reduced equipment prices.

Our position in the Consultation

- 3.4 In the Consultation we set out our views that HD services are set to become an increasingly important part of the digital TV landscape and the successful development of HD services on DTT is likely to be instrumental in ensuring that the platform remains attractive to consumers and citizens. We consider that the DTT platform plays an important role in ensuring the whole country has access to PSB content free to air. Part of this success will be dependent on free to air HD content available on the DTT platform being equally attractive as that available on competing digital platforms.
- 3.5 We recognised that falling costs of digital storage and increased broadband speeds made it easier to distribute unauthorised digital copies of HD content, and that this could lead rights holders to increasingly demand that content management is applied to its broadcast content. Without the availability of an effective content management framework rights holders may be less willing to offer their content on the same commercial terms as other platforms. We noted that existing HD platforms on which PSB content is available use content management or do not provide digital HD outputs on their receivers (Virgin Media, freesat and Sky).
- 3.6 We came to the provisional view that, due to the likelihood that content management would deliver a greater variety of content to viewers on the DTT platform, an effective content management framework should be available for broadcasters to use on HD DTT. However, we also recognised that there were risks of potential detriments for consumers (we consider these risks in section 5).
- 3.7 In assessing whether the BBC's proposals would deliver benefits for citizens and consumer we have reviewed the response to the Consultation to establish what evidence exists to support the BBC's arguments that an effective content management framework would deliver a wider range of HD content and whether there is any evidence that contradicts those arguments.
- 3.8 We posed the following question in the consultation document:
- (Q1) Do you agree that copy management would broaden the range of HD content available on DTT and help secure its long term viability as a platform?

Summary of consultation responses

Viewers and consumer groups

- 3.9 A significant number of individual consumers responded to our consultation. A large proportion of these consumers were open source software developers or users of open source software, many of whom stated that they watched television via receivers which rely on such software. These respondents largely disagreed with the assertion that the creation of an effective content management framework on HD DTT would broaden content availability on the platform. This view was also expressed by the Open Rights Group (ORG)
- 3.10 The principal arguments made by those who questioned the impact an effective content management framework would have on breadth of HD content available on the DTT platform were:

- a lack of evidence that rights holders would refuse to make high value content available in the absence of an effective content management framework on HD DTT;
 - that content management is not used on the HD DTT platform in the US;
 - that content management is not used on the DTT platform in the UK for Standard Definition (SD) broadcasts but a wide range of SD content is available;
 - that the UK represents too important a market for rights holders to boycott, irrespective of whether content management is implemented or not.
- 3.11 The ORG also argued that absence of content management would constitute a unique selling point for the DTT platform which would make it more attractive to consumers.

Broadcasters and rights holders

- 3.12 A number of broadcasters (including the BBC, BBC Worldwide, Channel 4, Five and S4C) responded to the Consultation. Similarly, we received responses from organisations representing rights holders, including the Motion Picture Association (MPA), and the Producers Alliance for Cinema and Television (PACT).
- 3.13 The MPA and the PACT indicated that the existence of an effective content management framework on the HD DTT platform would improve the platform's ability to attract high value content. A majority of broadcasters (including BBC, BBC Worldwide,, Channel 4, Five and S4C) also concurred with the view that rights holders would be likely to make a greater amount of high value content available for broadcast on the HD DTT platform if an effective content management system was available. Channel 4 cited specific commercial negotiations as evidence of this.
- 3.14 In general, both broadcasters and rights holders' organisations responding to the Consultation agreed that an increase in the range of high value content available on HD channels would increase the long term viability of the DTT platform. One respondent also provided evidence that the range of programming available was by far the most appealing feature of the DTT platform and argued that if HD DTT channels could not offer a wide range of premium programming, the HD DTT platform would not be able to offer a competitive consumer proposition. They also asserted that, in the longer term the DTT platform will not be able to compete with other platforms unless it provides an attractive HD service offering.

Equipment manufacturers and technology suppliers

- 3.15 Six commercial equipment manufacturers including a number of multi-national electronics companies, responded to the Consultation.
- 3.16 Equipment manufacturers' views on the impact that the implementation of content management would have on content availability and the long term viability of the platform were mixed. Four equipment manufacturers expressed the view that effective content management would broaden the range of high value content available on terrestrial HD channels. However, one of these manufacturers argued that the amount of additional material which would be secured as a result of effective content management would be sufficiently small that it would not have a decisive impact on the viability of the platform. Another manufacturer suggested that it

concluded with this view, noting that terrestrial HD TV services in the USA and France are broadcast free to air without any copy management.

- 3.17 The Digital Transmission Licensing Administrator (DTLA) (the body that licenses the content management technologies specified by the DTG for use on the HD DTT platform) also responded to our consultation. The DTLA endorsed the view that the presence of an effective content management system on HD DTT would result in more high value content becoming available in early release windows on the platform. The DTLA supported this assertion by citing statements made by content owners to the DTLA over the past decade, expressing a greater willingness to release content in digital formats in earlier windows, and under new digital business models, when content protection is available.

Further analysis

Content rights negotiations

- 3.18 In the light of response to the Consultation we asked major broadcasters on the HD Freeview platform to provide further evidence to support their view that the presence of an effective content management framework on the HD DTT platform is a material consideration in HD broadcast rights negotiations.
- 3.19 These broadcasters provided commercially confidential details of a wide range of high value film and drama HD content that they would be unable to show (due to contractual considerations) if an effective content management framework were not provided on the DTT platform.

Ofcom's response

- 3.20 For reasons of commercial confidentiality, we have not been able to include the specific details of the information provided by broadcasters on the HD content that would be affected if an effective content management framework is not provided on the platform. However we consider that the evidence put forward by broadcasters does provide material and credible evidence that the lack of an effective content management framework on the HD DTT platform is currently resulting in a reduction of the range of HD content available and is a material factor for ongoing and future content rights negotiations.
- 3.21 Some individual consumer responses claimed that lack of content management on Standard Definition (SD) DTT has not resulted in a lack of attractive content. We do not believe that direct comparison can be made between SD and HD DTT platforms. When the DTT platform specification was developed in the late 1990s the technologies required to store, copy and re-distribute digital TV content were less readily available and internet adoption and speeds were low. Consequently, the threat posed to content providers was significantly less than it is today. Whilst a greater threat exists today, it is not possible to retro fit content management to existing receivers and so it is not possible to secure effective content management for SD content. Rights negotiations for SD content have always been conducted in the context of no content management on DTT, hence there is a lack of evidence to assess whether a greater range of content would have been made available if content management were present. However, we note that content management capabilities are present on SD Pay-TV platforms and its presence indicates that it helps operators to secure more favourable terms with rights owners.

- 3.22 Some individual viewer responses claimed that lack of content management on the HD DTT platform in the US demonstrated that there would not be a restriction on the variety of content available if no content management were introduced for HD DTT in the UK. We do not believe that the content rights for the US and UK are directly comparable due to, for example, adoption of cable television is far greater in the US and terrestrial television is less popular than it is in the UK and this is likely to affect the nature of release windows and content rights negotiations. It should also be noted that the Federal Communications Commission (the US regulator) has recently allowed cable operators to use content management on video on demand content made available in early release windows. This decision was made on the basis that it would allow consumers to get earlier access to high value programming on their TV. This is a similar rationale to that put forward by the BBC in relation to free to air HD content availability on DTT i.e. that the use of content management will enable broadcasters to secure more attractive content in earlier release windows.
- 3.23 The ORG suggested that not using content management would increase the overall appeal of the HD DTT platform compared to platforms that use content management as consumers would be attracted by the flexibility it would provide in terms of copying content. We do not disagree that individual consumers are likely to prefer to have no restriction on copy content, however we consider that the reduction in the range of HD content that would result from a lack of effective content management would impact the long term appeal of the platform as research has shown that consumers value more highly the range of content on a TV platform over the technical features of the platform⁸.

Conclusion

- 3.24 We consider that the evidence provided by major broadcasters demonstrates that the availability of content management on the HD DTT platform is a material factor in negotiations between the broadcasters and rights holders. There is also evidence that some native HD material is not being shown on HD DTT due to uncertainties surrounding whether an effective content management framework will be provided on the platform.
- 3.25 Whilst some stakeholder responses asserted that, even if Ofcom were to refuse the BBC's proposal, rights holders would continue to supply HD content on the same terms as they would if the proposal were approved, the information provided by broadcasters does not support this view.
- 3.26 We have therefore concluded that it is likely that content would be withheld from the HD DTT platform in the absence of the introduction of content management. An effective content management framework would therefore increase the variety of HD content available on HD DTT platform and deliver positive benefits to citizens and consumers. The lack of effective content management on DTT would lead to a reduction in range of available HD content compared to other platforms. This is likely to reduce the appeal of the platform in the longer term.

⁸ Figure 24 of http://www.ofcom.org.uk/consult/condocs/market_invest_paytv/annex14.pdf

Section 4

The proposed licence modification

Introduction

- 4.1 In section 3 we concluded that maintaining effective content management on the HD DTT platform would deliver positive benefits for consumers by providing access to a wider range of HD content.
- 4.2 In this section we consider whether the BBC's proposal to restrict the availability of EPG data to receivers that implement content management is a proportionate means of ensuring effective content management on the HD DTT platform.

Summary of consultation document

- 4.3 Full details of the BBC's proposals were set out in section 3 of the consultation document. This section provides a brief summary of those proposals.
- 4.4 The inclusion of content management technologies in the baseline specification for HD DTT receivers was established prior to the BBC's proposal by the industry stakeholder Digital Television Group (DTG)⁹, compliance with this specification is also a condition of using the Freeview HD trade mark license.
- 4.5 Compliance of HD DTT receivers sold in the UK with the DTG receiver specification is not mandatory, and it is therefore possible for some manufacturers to develop receivers that comply with some of the HD DTT receiver specifications, but omit to include content management. The BBC argued that the presence of such receivers in the UK market, which would offer full HD receiver functionality without imposing content management restrictions on how HD content can be used by consumers, would undermine the effectiveness of the content management framework provided on the platform in the eyes of rights holders and thereby reduce the range of HD content available to viewers.
- 4.6 To reduce the number of manufacturers who elect not to include content management in their receivers (and thereby maintain the effectiveness of content management on the platform), the BBC proposes to restrict access to broadcast EPG data for the HD channels to those receivers which support content management. This would be achieved by encoding the broadcast HD programme data (using Huffman Codes) and licensing the 'look-up tables' required in each receiver to decode the this data to manufacturers on the condition that they also implement content management technology in their receivers. In this way only receivers that implement content management would be able to use the HD programme data to provide an EPG for consumers.
- 4.7 Restricting access to the broadcast programme data in this way is not currently permitted by the BBC's multiplex B licence which requires that EPG data must be made "freely available". To allow its proposed approach for securing an effective content management framework on the HD DTT platform to be implemented the BBC has therefore requested a license amendment from Ofcom.

⁹ The Digital Television Group (DTG) is a cross-industry body that draws up a specification for DTT equipment to ensure interoperability with broadcast services.

- 4.8 In assessing the BBC's request, we have considered whether the BBC's proposed approach for providing an effective content management framework on HD DTT is a proportionate means of securing this outcome. In considering this, we asked the BBC to provide details of the alternative options it had established for securing the same outcome and why it considered its proposed approach to be the most appropriate solution. The BBC submitted this additional information in December 2009 which we referenced in our second consultation.
- 4.9 The BBC also proposed (in its letter of the 8th December 2009) that Ofcom should make similar amendments to the licences for Multiplexes C & D. These multiplexes will "cross carry" the encoded HD EPG data and the BBC argued that, should the Multiplex B licence amendment be granted, the same access restrictions would need to be put in place to secure the effectiveness of content management framework on the platform and that this would not be possible under the existing licences for Multiplexes C and D.

Our position in the consultation document

- 4.10 In the consultation we set out our view that the proposed licence amendment represented a proportionate approach to the introduction of an effective content management framework on the HD DTT platform. We also said that we were minded to approve the request for amendments to the licences for Multiplexes B, C and D and proposed detailed wording for these amendments. We sought stakeholders' views on four specific questions:
- (Q2) Do you agree that the BBC proposed multiplex licence amendment represents the most appropriate means for securing an effective content management system on HD DTT?
 - (Q3) Do you agree with the proposed change to Condition 6 in the Multiplex B License?
 - (Q4) Do you agree that Multiplex C & D should be granted a similar amendment to their licences as Multiplex B?
 - (Q7) Do stakeholders agree that the BBC's proposed Huffman Code licensing arrangements would have a negligible effect on the market for HD DTT receivers?

Summary of consultation responses

Viewers and consumer groups

- 4.11 The vast majority of individual consumer responses to the consultation felt that the BBC's proposals would not be sufficient to provide effective content management framework on the HD DTT platform and would not result in a wider range of HD content being made available to citizens and consumers. This view was echoed by the ORG. The two main arguments made in support of this assertion were:
- an approach that blocks the access to EPG data alone (as opposed to the content itself) would be easy to circumvent, which would mean it would not prevent the availability of fully functioning products on the market which did not implement content management; and

- the Huffman codes the BBC proposes to use restrict the availability of programme data to receivers which implement content management would be easy to obtain without a licence from the BBC.

Broadcasters and rights holders

- 4.12 One platform operator asserted that the BBC's proposals would not be sufficient to provide an effective content management framework on the HD DTT platform, arguing that an effective content management framework would need to be mandated by Ofcom.
- 4.13 However, all other broadcaster responses to the consultation argued that the BBC's proposed approach would be sufficiently robust to secure an effective content management framework on the DTT platform.
- 4.14 In addition, broadcasters' responses generally endorsed the view that the BBC's proposals represent the least interventionist means of securing an effective content management framework. Two parties specifically asserted that the HD Freeview trademark alone would not provide rights holders with sufficient guarantees that equipment that did not support content management would not become available in the market.
- 4.15 We did not receive any evidence or assertions from broadcasters that the proposal would cause them to incur significant incremental costs.
- 4.16 For the reasons outlined above, all but one of the broadcasters expressed the opinion that Ofcom should approve the proposed variation of the BBC's multiplex B licence. Likewise, there was a broad consensus amongst broadcasters that similar amendments should be made to the multiplex C and D licences.
- 4.17 The major rights holders' groups which responded to our consultation were broadly supportive of the BBC's proposal for providing an effective content management framework on the HD DTT platform.
- 4.18 The MPA welcomed the BBC's proposal. It indicated that the approach of maximising the number of receivers which support content management by means of restricting access to EPG data would in principle be sufficiently robust to provide an effective content management framework on the HD DTT platform.
- 4.19 This view was shared by the PACT who indicated that of the options considered, the BBC's proposal represented the least interventionist means of securing an effective content management framework on the HD DTT platform.

Equipment manufacturers and technology suppliers

- 4.20 Equipment manufacturers were divided as to whether the BBC's proposals would provide an effective content management framework in the eyes of rights holders. A major TV manufacturer expressed the view that an approach that did not encrypt the video and audio content would be insufficient to satisfy rights holders. On the other hand, other manufacturers felt that the BBC's proposed approach would be sufficient to increase the range of content that rights holders make available for broadcast on the HD DTT platform.
- 4.21 Those equipment manufacturers that felt the licence amendment would deliver an effective content management framework also agreed that it represented the least

interventionist means for widening the range of high value content available on the platform. For instance, one manufacturer contended that the Freeview trademark alone would not provide rights holders with sufficient assurances that their intellectual property would be safeguarded.

- 4.22 Equipment manufacturers expressed mixed views on whether the proposals would have a disproportionately adverse effect on the receiver market.
- 4.23 Those manufacturers that deemed the BBC's proposals to constitute a proportionate means of securing content management on the terrestrial HD platform also argued that the licence amendment would not have significant impact on the receiver market.
- 4.24 In contrast, other manufacturers argued that the licence amendment might create an unlevel playing field in the receiver market. Specifically, they contended that a proportion of receiver manufacturers would not include content management technology in their products irrespective of the BBC's proposals and argued that these manufacturers would enjoy an unfair competitive advantage.
- 4.25 The DTLA stated that discussions it had had with film studios led it to believe that the proposed licence amendment is sufficiently robust to persuade rights holders to make a broader range of high value content available on the HD DTT platform. Moreover, it expressed the view that the BBC's proposals represent the least interventionist means of implementing a content management system which would achieve this goal.

Ofcom's view

- 4.26 In assessing whether the BBC's proposals represent a proportionate approach to achieving its objectives, we have reviewed the response to the Consultation to establish what evidence there is to support the BBC's view that its approach is sufficient to provide an effective content management framework on the platform and is the minimum intervention necessary to achieve this objective.
- 4.27 Since our consultation closed a number of HD DTT products have been released into the UK receiver market. To our knowledge all of these carry the HD Freeview logo, indicating that they fully comply with the HD Freeview receiver specifications and include content management. Whilst this might suggest that the BBC proposals are not necessary to ensure effective content management on HD DTT, we note that the market is still very nascent and has not to date necessarily attracted smaller manufacturers that may be less dependent on the Freeview HD logo to promote their equipment, as has been the case with SD Freeview.
- 4.28 Stakeholders that claimed the BBC's proposal was not sufficient to provide an effective content management framework argued that only solutions that encrypted HD audio and video streams would be effective. However, we note that PSB broadcasters on the DTT platform are prohibited from using encryption. We consider that the regulatory changes that would be required to allow PSB channels to be encrypted, and the adverse impact this would have on the nascent market for HD DTT receiver equipment (because current generation equipment does not necessarily support conditional access technology needed to decrypt encrypted HD audio and video streams and hence would become redundant and need to be replaced), would be disproportionate.
- 4.29 Whilst a number of stakeholders (including consumers and consumer groups) considered that the proposed technical approach for providing an effective content

management framework system was not as robust to circumvention as other alternative approaches such as the encryption of the HD video and audio streams, we do not consider technical robustness to be the primary measure of overall effectiveness. Rather we consider this to be defined by the extent to which an approach is viewed as sufficient in the eyes of rights holders such that broadcasters can secure rights to a wider range of HD content on the DTT platform. The majority of broadcasters considered that the BBC proposals would be sufficient to allow them to secure a wider range of content, and this view was shared by the MPA. This broad endorsement by both broadcasters and rights holders is evidence that the BBC proposal for providing an effective content management framework would be a proportionate means of securing the desired objective of enabling a wider range of HD content on the DTT platform.

Conclusion

- 4.30 Whilst adoption of the Freeview HD logo by receiver manufacturers has resulted in early receiver equipment implementing the content management solution specified in the DTG receiver specification without the BBC proposals being implemented, we remain of the view that, absent the BBC proposal, mass market receiver equipment with no content management could enter the market in the future. Over time this could lead to an unlevel playing field between receivers which implement and do not implement content management, causing the market to 'tip' in time such that a large proportion of manufacturers would stop including content management technology in their products. As set out in section 3, this may result in a reduction in the variety of content being made available on the HD DTT platform and would therefore be an undesirable outcome for viewers. We therefore consider that the BBC proposal is a proportionate means of securing effective content management framework on HD DTT.
- 4.31 Whilst some stakeholders claimed that the encryption of video and audio streams would provide a more technically robust content management solution, we do not consider that the regulatory changes that would be required to secure this and the impact on the nascent receiver market would be proportionate and could result in direct consumer harm due to current generation HD receivers becoming obsolete.
- 4.32 Given the evidence submitted by broadcasters who are currently negotiating HD rights for HD DTT, we are satisfied that the approach set out in the BBC's proposal is a proportionate means of ensuring an effective content management framework on the HD DTT platform that will allow broadcasters to secure a wide range of HD content.

Section 5

The appropriateness of the detailed proposals by the BBC

Introduction

- 5.1 In Section 4 we concluded that the conditional licensing of Huffman Code look-up tables by the BBC is a proportionate means of securing an effective content management framework on the HD DTT platform.
- 5.2 As set out in section 2, Ofcom does not have powers to require Multiplex licence holders to provide, or not provide, content management. Consequently, it would not be appropriate for Ofcom's consideration of the proposed licence amendment, which relates to the provision of EPG data, to be used as a means of regulating content management. We do not therefore propose to seek to determine the precise details of how any content management system would work. However, we do have a general duty to further the interests of consumers and citizens and, in the context of the proposed licence amendment, it is pertinent for Ofcom to consider the effect on viewers of the detail of the proposals in order to ensure that the full impact of the proposals has been considered.

Summary of consultation document

- 5.3 In the consultation document we referred to a number of commitments that the BBC had set out in its December 2009 submission aimed at ensuring that citizens and consumers are protected for the inappropriate application of content management on the HD DTT platform. These included:
- A commitment that the content management states and the circumstances under which they would be used would comply with current usage protections under copyright law and any future extension of these protections.
 - A commitment to establish a process whereby viewers who believe their lawful usage is being impinged by the content management solution for BBC services can raise their concerns directly with the BBC.
 - A commitment to work with other PSBs to create a 'user friendly' consumer guide on content management.
 - A commitment to facilitate discussions with broadcasters, manufacturers, relevant industry bodies and consumer groups to develop and implement a good practice framework for the use of content management on HD DTT.
- 5.4 We also summarised the BBC's proposal to offer royalty free the Huffman Code look-up tables required to decode the encoded HD EPG data.
- 5.5 We summarised the content management states and use rules that had been agreed between the DTG and the DTLA (the licensing body for the content management technologies).

- 5.6 We also considered the potential impact on the BBC's proposals on the market for HD DTT receivers, particularly in terms any increased price of manufacture.

Our position in the consultation document

- 5.7 The preliminary view we set out in the consultation document was that the proposed commitments by the BBC to prevent the inappropriate application of content management on the HD DTT appeared to us to be sufficient to safeguard legitimate content fair usage rights, provided that these commitments were also supported by the other free to air HD broadcasters.
- 5.8 We indicated our view that broadcasters should aim to apply the least restrictive content management state possible to secure the HD content in order to maximise the benefits delivered to consumers.
- 5.9 We agreed with the BBC's claims that inclusion of the content management solution specified by the DTG would result in a negligible increase in receiver prices, and that these technologies would also be interoperable with the vast majority of HD consumer equipment.
- 5.10 We posed the following questions in the consultation document:
- (Q5) Do you agree that the BBC's proposed approach for implementing content management would safeguard citizens and consumers legitimate use of HD content and, if not, what additional guarantees would be appropriate?
 - (Q6) Do you agree that the BBC proposed choice of content management technologies will have only a negligible impact on the price of HD DTT receivers and their interoperability with other HD consumer equipment?
 - (Q8) Do the BBC's proposed content management states and their permitted use for different categories of HD content meet the requirements of other HD broadcasters on DTT?

Summary of consultation responses

Viewers and consumer groups

- 5.11 Both the ORG and the majority of individual consumers who responded to the consultation expressed concerns with the details of the BBC's proposal.
- 5.12 A large number of individual respondents argued that the DTLA's encoding rules would place unacceptable restrictions on viewers' ability to use content as they wished. In this context, numerous respondents claimed that the content management system would impinge upon viewers' ability to exercise fair dealing exemptions under copyright law. These concerns were broadly speaking echoed by the ORG.
- 5.13 The ORG also raised concerns about the possibility that the way content management was used would increase over time, arguing that if the proposed amendment was granted it would inevitably be followed by proposals for other, more restrictive, content management systems. A number of consumers also echoed this concern.
- 5.14 Concerns about end user rights were also expressed by the British Library. The British Library noted that section 75 of the Copyright, Designs and Patents Act 1988

(CPDA) allows designated bodies including the British Library to record and copy broadcasts for archiving purposes. It sought assurances that the proposed content management system would not constrain its ability to exercise these rights. Similar concerns were raised by the BFI and the Film Council.

- 5.15 A significant number of consumers expressed concerns that the BBC's proposals would drive up equipment costs. Respondents provided a number of reasons why they believed this would be the case. Specifically they argued that:
- additional equipment testing would be required if content management software had to be included in receivers;
 - equipment manufacturers would have to pay licenses to the DTLA for the use of DTCP;
 - equipment would have to be manufactured specifically for the UK market, reducing economies of scale in production; and
 - the terms of the DTLA's licence effectively prohibit the use of many types of open source software. Open source receiver users would therefore have to resort to purchasing more expensive alternative equipment. Receiver manufacturers could no longer use open source code in their products. Forcing them to draw on proprietary code would drive up costs.
- 5.16 The ORG and a number of individual consumers also considered the BBC's proposal to be anti-competitive. These respondents argued that since new entrants to the receiver market can draw upon existing open source software free of charge when designing devices, such software lowers barriers to market entry. Consequently, the ORG asserted that the terms of the DTLA licence for the relevant content management technologies would reduce competition because they restricted the use of open source software.
- 5.17 Finally, the ORG echoed some equipment manufacturers' concerns regarding the role of the DTLA. The ORG noted that the DTLA is not a publicly accountable body. It argued that this being the case it was inappropriate that the DTLA should be granted the power to determine how viewers could use different types of content.

Broadcasters and rights holders

- 5.18 Broadcasters' comments on the detail of the BBC's proposals focussed on two main issues:
- the types of HD content to which different content management states can be applied, these 'encoding rules' are currently set by the DTLA¹⁰; and
 - the establishment of a process whereby viewers who believe their lawful usage is being impinged by the content management solution can raise their concerns directly with broadcasters.
- 5.19 The envisaged DTLA encoding rules for the HD DTT platform are:

¹⁰ The Digital Transmission Licensing Administrator (DTLA) owns the intellectual property rights for the Digital Transmission Content Protection (DTCP) content management technology to be included in receivers and has established 'encoding rules' for the types of HD content to which different content management states can be applied.

- Consumers can always make at least one HD copy of a broadcast programme;
- The use of a 'copy never' management state is not permitted;
- The encoding state that prevents the retransmission of HD content outside the home or a personal network can be applied to any HD content;
- The encoding state that permits only one copy to be made of the content is restricted to HD content that has not been transmitted in other major markets in HD without content management protection.

5.20 All of the broadcasters that responded to our consultation were of the opinion that the DTLA encoding rules would afford viewers with a sufficient degree of latitude to copy and record content.

5.21 Most broadcasters cautiously endorsed the DTLA's encoding rules, indicating that they would broadly speaking meet their requirements. Nonetheless, some broadcasters had some reservations over the flexibility which would be afforded to them by the DTLA's encoding rules. Two broadcasters qualified their endorsement by emphasising that it was important that encoding rules should not limit their flexibility to offer rights holders' guarantees as to the level of copy protection they can apply to their broadcast content.

5.22 The majority of broadcasters indicated that they agreed that the minimum level of content management necessary should be applied. However, the BBC objected to Ofcom's proposal to add the following additional condition to the multiplex B licence:

'free to air HD broadcasters only apply the minimum level of content management needed to secure HD content from rights holders'.

The BBC argued that this condition relied on subjective judgements and was therefore liable to generate appeals against the particular application of content management to a specific programme that would be difficult to resolve.

5.23 The BBC stated that in principle the notion of operating a process whereby stakeholders can appeal to the BBC directly, rather than the Secretary of State, which is the current practice, if they believe their fair dealing of HD content is being impinged was acceptable provided the scope and range of issues which would be subject to appeal are clearly defined. A number of broadcasters also expressed reservations about the establishment of a process that would allow viewers to appeal a broadcaster's specific application of content management to a particular programme. Two broadcasters indicated that it would be too onerous for them to operate such an appeals process.

5.24 The MPA supported the BBC's proposal for a licence amendment, but suggested a number of modifications to the detail of the BBC's proposal. Specifically it recommended that:

- measures should be put in place to ensure the renewability of compromised Huffman Coding and content management software (including software on deployed receivers);
- the BBC should have a process in place to take action against manufacturers who seek to use the Huffman look-up tables without complying with content management requirements;

- content management should be permitted to be applied to SD content that results from the down conversion of HD content within the receiver in instances where the content has only been previously broadcast in HD; and
- broadcasters should be able to apply whatever encoding states were set out in the latest applicable version of the DTLA encoding rules – i.e. future changes in the DTLA's encoding rules should result in corresponding changes to the encoding states used by broadcasters on the terrestrial HD platform.

The MPA indicated that these additional steps would further broaden the range of content which rights holders would make available for broadcast on terrestrial HDTV.

Equipment manufacturers and technology suppliers

- 5.25 Manufacturers had mixed views on the detail of the BBC's proposals. Some manufacturers argued that the DTLA's encoding rules would afford consumers adequate freedom to record and copy content. These manufacturers also expressed the view that the proposals would have a negligible effect on the price of equipment in the mass market.
- 5.26 However, other manufacturers raised some concerns about the encoding rules and one raised questions as to the appropriateness of allowing a private body such as the DTLA to determine these rules. This manufacturer also raised concerns over the licensing terms associated with the DTG agreed content management technology. One other supplier of receivers also raised concerns over the details of the DTG specification in relation to data encryption.
- 5.27 In addition to this, two manufacturers raised questions about the impact the BBC's proposals would have on the cost of receiver equipment. Both of these respondents argued that the BBC's proposals in respect of the inclusion of DTCP (the technology used to allow protected content to be copied between devices) would mean that receivers would have to be tailored specifically for the UK market. They argued that this would reduce economies of scale available to receiver manufacturers. Moreover, one of the respondents in question asserted that the inclusion of the proposed content management technologies would result in additional complexity in the development and testing of receivers.
- 5.28 In contrast, the DTLA argued that the use of DTCP would only have a negligible cost on the price of receivers. It made three arguments in support of this contention:
- Fees for DTCP licenses are calculated on a cost recover basis and are therefore small. For example, the fee for generating cryptographic keys and certificates ranges from 5 to 7 cents (US) per device;
 - DTCP functionality is typically integrated in multifunctional microprocessors, such that the cost of DTCP functionality in those components is negligible; and
 - Many manufacturers of HD DTT receivers also manufacture other products that use DTCP, and so the amortized cost of annual licence fees to DTLA will also be negligible on a per device basis.
- 5.29 The DTLA asserted that the DTCP Encoding Rules would in no way impede 'reasonable and customary consumer personal enjoyment' of content. It also addressed the issue of interoperability, stating that DTCP was designed specifically to promote interoperability.

Ofcom's view

Suitability of the currently proposed content management usage states and rules

- 5.30 A large number of respondents claimed that the proposed content management usage states and rules would impinge on their fair dealing exemptions under the CDPA.
- 5.31 Whilst we recognise that viewers may wish to record or copy material within the confines of the provisions of the CDPA, that legislation does not grant rights to copy material to viewers. Rather, it provides a defence to any action for copyright infringement. Viewers do not therefore have any right to copy any material broadcast on the HD DTT platform. In this context, it would not be appropriate for Ofcom to refuse to allow copy management on the basis of such a right. We would nevertheless hope that broadcasters sought to ensure the greatest flexibility possible for viewers.

Changes to content management states and use rules

- 5.32 The MPA and a number of broadcasters have suggested that broadcasters should be afforded the flexibility over the content management states they can apply to their content to ensure that widest possible range of content is available on the HD DTT platform.
- 5.33 We recognise that broadcasters may wish to change the way they apply content management to content in the future to better reflect commercial needs, changes in consumer expectations and, potentially, changes to copyright legislation.
- 5.34 We have also reconsidered our proposal that broadcasters should '*only apply the minimum level of content management needed to secure HD content from rights holders*' and agree with the BBC's view that in practice it would be very hard to make such an assessment objective and such a requirement could therefore lead to unnecessary confusion and appeals.

Scope of an appeals process

- 5.35 The BBC indicated that it agreed that it was appropriate for the conditions and undertakings it accepted in relation to users rights regarding the level of content access to be spelled out. In relation to appeals, the BBC proposed that this process should only provide an opportunity to challenge a change (or lack of change) in the application of content management where (a) there is a change in UK copyright legislation, (b) there is a change in the licensing conditions associated with the content management technologies or (c) a broadcaster is demonstrably not complying with any conditions imposed by Ofcom. The BBC considers that a wider scope which allowed appeals in respect of every programme could result in a very large number of appeals and hence a disproportionate administrative burden. Other broadcasters raised similar concerns.
- 5.36 Ofcom recognises that a broad appeal scope could give rise to an unnecessary administrative burden. As set out at 5.31 above, there is no right to fair dealing granted by the CDPA and that those provisions offer a defence to a copyright infringement action. Ofcom does not therefore consider that there should be an individual right of appeal in respect of individual programmes. Ofcom however welcomes the proposals of the broadcasters to introduce a workable appeals process

which seeks to ensure that the interests of viewers and other stakeholders are met as far as possible.

Cost of equipment

- 5.37 The costs associated with including the DTG agreed content management technologies within receivers can broadly be split between (i) one off development costs (ii) per receiver bill of materials costs (IPR licensing and hardware) and (iii) ongoing product support costs.
- 5.38 Since the consultation closed, Freeview HD has undertaken a marketing launch and a number of leading consumer electronics manufacturers have released products that carry the Freeview HD logo, and hence comply with the DTG content management requirements. Products carrying the Freeview HD logo are now available from Bush, Ferguson, Humax, Metronic, Panasonic, Sony, Samsung, Toshiba, Digital Stream, Sharp, LG and others.
- 5.39 The availability of this equipment indicates that development costs associated with implementing content management have already been incurred by some manufacturers (to the extent required for current receiver product functionality), and that these costs cannot therefore be considered to be a direct result of the BBC's proposals.
- 5.40 In relation to the bill of materials associated with the content management technologies, it is apparent from the evidence presented by the DTLA that the licensing fees for the content management technologies make up only a small percentage of the total bill of materials, in particular in relation to integrated digital TVs.
- 5.41 We did not receive any evidence in respect of the ongoing maintenance costs manufacturers are likely to incur. However, we are aware that manufacturers are increasingly required to upgrade software elements of their products to address software bugs and introduce new functionality. Any upgrades required specifically in relation to content management are therefore likely to be a relatively small increment to the upgrades that would be required absent content management.
- 5.42 We have not received any evidence that manufacturers who choose not to include content management in their products will be able to manufacture products at significantly lower prices due to reduced development, bill of materials or ongoing maintenance costs.
- 5.43 However, some stakeholders claimed that the DTLA's and hence the BBC's proposed licensing terms prohibited the use of certain open source software in receiver equipment, and in doing so increased the development and manufacturing costs of manufacturer because they would either have to develop new software or pay licensing fees. i.e. the inability to use open source software would increase the cost of the bill of materials for the receivers, thereby prohibiting the supply of lower cost receivers to consumers.
- 5.44 However, in its original submission the BBC highlighted that there are already manufacturers using open source software in receivers which support the DTLA licence technologies. The Linux Foundation has made a useful distinction between two approaches to receiver solutions based on Open Source, the first being "Proprietary but built on Open Source" (in which open source software is included in a device which also contains proprietary software which is not modifiable by others)

and the other being “fully open platforms” (in which all aspects of the software are modifiable by others). The BBC claimed that existing HD freesat receivers fell within the first category, but offered no view on what the impact of the BBC proposals would have on the second category.

- 5.45 Given that many mass market receiver manufacturers have already incurred the development costs associated with implementing content management in their products, the low per device licensing fees and the ability to exploit the cost benefits of open source software in “proprietary” receivers, we are of the view that the BBCs proposals will not have a significant incremental impact on the cost of mass market consumer equipment. We consider the implications for “fully open” platforms in section 6.
- 5.46 Whilst two receiver manufacturers queried the detail of the DTG specification in relation to content management and the licensing terms offered by the DTLA, we would expect that these issues would be resolved using the normal process within the DTG. Ofcom does not have the statutory powers to intervene in the specific choice and the use of those technologies in receivers.

Conclusion

- 5.47 We recognise that the way in which content management is applied on the platform may evolve over time to reflect changing commercial circumstances or changes to copyright legislation and that it may be appropriate to allow a level of latitude to broadcasters in this respect. We welcome the proposals to set out clear policies on content management and to provide an appeals process when changes to these policies are made.
- 5.48 Furthermore, we have also considered the extent to which it would be appropriate for Ofcom to intervene to determine or approve the use of content management by broadcasters. As set out at paragraph 2.18 above, Ofcom’s powers in respect of content management are limited and it would not be appropriate to seek to use the current consultation as a means of granting powers to Ofcom to regulate content management on the DTT platform. As a result, we do not consider that specific conditions should be applied by Ofcom to determine the application of content management states.
- 5.49 We welcome the proposals which have been set out however, which seek to ensure that viewers are provided with the greatest opportunity possible to record and copy material broadcast on the HD DTT platform. In our view, those proposals demonstrate that, in light of our conclusion that the introduction of content management would deliver a broader range of HD content to viewers, viewers would not be unduly affected by the BBC’s detailed proposals. As a result, we do not propose to impose additional conditions on the implementation of those proposals in this respect.

Section 6

Additional concerns raised in relation to the proposals

Introduction

6.1 The previous section considered stakeholders views on the details of how the BBC proposes to implement its licence amendment. This section considers other wider concerns raised by stakeholders in their responses to the consultation.

Summary of consultation document

6.2 We highlighted in the consultation document that in considering the BBC's request for a licence amendment Ofcom was not being asked to consent to the deployment of content management on DTT. Rather, we were being asked to consider the appropriateness of the method by which the BBC proposes to create an effective content management framework on the HD DTT platform.

6.3 In assessing whether the BBC's proposals would deliver benefits to citizens and consumers we have reviewed the responses to the Consultation to establish what evidence there is that the proposal could also lead to consumer harm and the potential magnitude of any such harm.

6.4 We posed the following question in the consultation document:

- (Q9) Are there any issues that you consider Ofcom should take into account in assessing the BBC's proposal, that have not been addressed by this consultation?

Summary of consultation responses

Equipment manufacturers and technology suppliers

- 6.5 Two manufacturers raised concerns that if the use of Huffman codes was extended to Multiplexes C and D the performance of legacy DVB-T receivers might be adversely affected i.e. legacy receivers may malfunction if they were unable to correctly process (or ignore) the encoded HD EPG data.
- 6.6 One receiver provider suggested that manufacturers who produced receivers that were not reliant on the broadcast EPG data stream (for instance those that retrieved EPG data via a broadband connection) may choose not to implement content management even if the BBC's proposed licence amendment were granted. This manufacturer claimed that this could distort the market in their favour if consumers were attracted to such products.

Consumers and consumer groups

- 6.7 Of the 549 individuals who responded, 197 were advocates of the use of open source software which many argued fosters innovation. The same view was also endorsed by the ORG. These respondents contended that the DTLA's licensing terms would effectively prohibit the use of many open source licences and claimed that as a result innovation in the receiver market would be stifled.
- 6.8 In its response, the BBC refuted this argument, arguing that there is abundant evidence of innovation based on proprietary software. Moreover, it claimed that some open source licences make provisions which would allow programmers to use unpublished proprietary code alongside published open source code.
- 6.9 Along with a small number of individual respondents, the RNIB opposed the BBC's proposal on the grounds that it would have a detrimental impact on partially sighted viewers. The RNIB asserted that a large number of receivers with special functionality for the partially sighted (for example audio description set top boxes) are produced as a result of innovations made by open source developers. The RNIB argued that the proposed licence amendment would restrict the use of open source software and therefore constrain innovation in this area. Additionally, the RNIB was concerned that small niche manufacturers that produce specialist equipment for the partially sighted may not be able to absorb the licensing costs associated with content management technology. The RNIB contended that this would result in a reduction in the availability of receivers with audio description functionality.
- 6.10 164 individual responses argued it was inappropriate for restrictions to be imposed on how they can use content broadcast by the BBC on Multiplex B given that they had paid the Television Licence fee. Similarly, the ORG contended that the BBC's proposals are incompatible with its status as a licence-funded public service broadcaster. Specifically, the ORG asserted that the BBC is obliged to provide public value in exchange for the licence fee and stated that 'the BBC's own articulated principles of providing public value run contrary to the idea of placing prior restraint on how licence-payers may use their televisions, and on which receivers may be offered in the market'. Respondents did not raise the same concerns with HD content broadcast by commercial PSBs.

- 6.11 Both the ORG and a large number of consumers opposed the proposal on the grounds that it would result in equipment obsolescence. Concerns about equipment obsolescence took three main forms:
- concerns that open source receivers do not comply with DTLA rules and would therefore be unable to continue receiving the EPG if the licence amendment were approved
 - concerns that existing mainstream HD ready equipment would not be compatible with the BBC's proposals;
 - concerns that if the Huffman codes and/or the DTCP content management software were circumvented a new content management system would need to be put in place. Many respondents were concerned that this might result in equipment obsolescence.
- 6.12 Numerous consumers expressed concerns that the introduction of DTCP would reduce interoperability between devices. In particular, consumers expressed concern that the BBC's proposals would make it difficult for viewers to transfer HD content to portable devices such as mobile phones. The majority of those respondents framed their remarks on interoperability as a rejection of content management in general rather than as a criticism of DTCP in particular. Some respondents cited the experience of the music industry in using DRM as evidence that the introduction of content management generally tends to result in decreased interoperability.

Ofcom's view

Risk to legacy receivers & market distortions

- 6.13 We recognise that any changes to multiplex configurations can increase the risk of technical issues arising with existing receivers. However, multiplex operators, in conjunction with the DTG, are experienced in introducing such changes and we do not believe there is a significant risk that the introduction of Huffman coding on Multiplexes C and D will cause material problems for existing receivers.
- 6.14 In relation to receivers that are not reliant on the broadcast EPG data (and the concerns that such receivers may choose not to include content management) – we do not expect the market for such receivers to be significant for the foreseeable future compared to the market for products that are able to operate without a broadband connection. It is reasonable to assume that consumers generally expect their television receivers to work without an active broadband connection, particularly for integrated digital TVs. We therefore do not expect that the availability of receivers which do not contain content management technology, but require a broadband connection, will significantly impact the market for set top box and integrated digital TV receivers that only require a DTT feed to operate.

Equipment obsolescence and interoperability

- 6.15 There are a small percentage of HD resolution displays, which do not carry the "HD Ready" logo that cannot support the HDCP content protection which forms part of the DTG receiver specification. Some stakeholders claimed that the BBC proposals would prohibit consumers from using this equipment with HD DTT receivers. We note however, that the vast majority of HD resolution displays in the UK do carry the "HD Ready" logo indicating that they support HDCP (the relevant content management technology specified by the DTG). Prior to the introduction of the HD Ready logo in

2005, some displays would not have supported HDCP. However, we also note that many of these early adopters are likely to have already taken HD service from Sky or Virgin Media in order to exploit the high definition capabilities of these displays. The fact that Virgin and Sky discontinued supply of set top boxes with HD analogue outputs within a few months of launching their HD service (only providing HDMI connections protected with HDCP) suggests that the demand for HD content from consumers with these older displays is negligible.

- 6.16 In relation to concerns that upgrades or changes to the content management system could result in obsolescence of legacy equipment, we do not consider these concerns to be material. The broadcasters, multiplex operators and manufacturers that together maintain the DTT platform and agree technical standards have a proven track record in ensuring continuity of service to legacy receiver devices and managing migrations to new technologies.
- 6.17 We recognise that some legacy consumer equipment, such as portable media players, may not support the DTCP technology that would allow HD content to be copied from a HD DTT receiver. However, we also note that, under the DTG receiver specification, owners of such devices could freely transfer SD copies of content from their HD receiver to the portable media player. Given the limited screen size and resolution of these devices, the limited support for HD content formats and the limited processing power and storage capacity, for most users the transfer of the SD version of a programme is likely to better meet their viewing needs. In the future, we would expect more portable device manufacturers to include the relevant content management technologies which would allow HD content to be copied from HD DTT receivers.

Use of open source software

- 6.18 As discussed in the previous section, the evidence we have reviewed indicates that DTLA licensing does not preclude manufacturers from including open source software within products, although we recognise that manufacturers are required to prevent users from easily modifying or re-configuring the equipment such that the content management is circumvented (and that this will generally be achieved through the inclusion of proprietary elements within the receiver). We expect that the availability of these proprietary solutions based on open source software could allow the development of niche products, such as those of interest to the RNIB. We also note that audio description capability will be required to be included in all HD Freeview receiver products, which was not the case for standard definition receivers.
- 6.19 Responses to the consultation suggest that open source software implementations which are 'fully open' may not meet the DTLA requirements, and may not therefore be able to meet the BBC license requirements for the Huffman look-up tables. We recognised that this could constrain innovation for 'fully open' receiver solutions, but note there are opportunities to use open source software in conjunction with proprietary software to develop receiver solutions. We are also of the view that these devices would represent only a very small proportion of the total mass market for HD DTT receivers even if the BBC's proposed licence amendment were not granted.

Use of content management on BBC television programmes

- 6.20 A number of respondents raised concerns in relation to how the BBC applies content management to its own programming, many claimed that television licence holders should not be restricted in how they use BBC broadcast content.

- 6.21 The appropriate use of the television licence fee by the BBC is a matter for the BBC and Government, not Ofcom. Ofcom does not have any responsibility for, or power over, the use of the licence fee. It would therefore be inappropriate for Ofcom to comment in this respect.

Conclusion

- 6.22 Having reviewed the information presented to us, we have concluded that the scale of any interoperability or obsolescence issues amongst mass market products is unlikely to be significant.
- 6.23 We have no evidence to suggest that the broadcasters, multiplex operators and manufacturers will not continue to carefully manage any future changes to the platform. As such, we do not consider there to be a material risk that the use and upgrade of content management technologies on the platform would result in equipment obsolescence.
- 6.24 In relation to “fully open” implementations of HD DTT receivers using open source software, we recognise that such implementations may not fulfil the BBC’s licensing terms for the Huffman Code look-up tables. As a result, receivers based on open source codes are likely to require a proportion of proprietary software or hardware which would ensure the BBC’s licensing requirements are met. Whilst this restriction may result in some consumer detriment in terms of innovation in the open source community, given the very low adoption of receivers based on fully open source software compared to those based on proprietary technologies, we are of the view that the detriment will be small and outweighed by the benefits.

Section 7

Conclusion

- 7.1 Having reviewed the evidence presented in stakeholder responses we have concluded that, on balance, the BBC's proposals will deliver net benefits to citizens and consumers in the form of ensuring that the HD DTT platform is able to offer viewers the broadest range of content possible. The BBC's proposals represent a proportionate means of achieving those objectives and we consider it appropriate on balance to grant the licence amendment requested. We also propose to make the same amendments to the licences for Multiplex C & D and will be writing to the licence holders for their comments (as required by the Broadcasting Act 1996)
- 7.2 In order to ensure that any restrictions on competition in the receiver market are kept to a minimum, the licence amendment is made on the condition that the BBC licenses the Huffman Code look-up tables on a royalty free basis. As we have only considered the proposed restrictions for the purposes of the introduction of content management and not in any broader sense, the amendment will also be subject to the condition that any restriction on the provision of EPG data must only be for the purposes of providing an effective content management framework on the HD DTT platform.
- 7.3 As set out in section 5, we do not consider it appropriate to impose any further conditions relating to the nature of the content management solution employed. This would amount to an extension of our powers into an area in which Parliament has not granted us jurisdiction and we have therefore decided that no further conditions are required in this case.
- 7.4 Nevertheless, whilst not a formal condition of our granting of a licence amendment, we welcome the commitment that the BBC has made to ensure that application of content management by broadcasters is consistent with copyright legislation. These include:
- The BBC will respect current usage protections under copyright law and any future extension of these protections, such as those recommended in the Gower's Review of Intellectual Property;
 - The BBC will create, with other PSBs, a 'user friendly' consumer guide to content management which will be published on their websites and made available to manufacturers and retailers;
 - The BBC will facilitate the development of a best practice framework for the use of content management on DTT in discussion with broadcasters, manufacturers, relevant industry bodies and consumer groups;
 - The BBC will establish a process whereby end users who believe their lawful usage is being impinged by the BBC's use of content management can raise their concerns to the BBC, rather than having to write to the Secretary of State, which is the current legal requirement.
 - That content management is not be applied to broadcast SD content,
 - That no functional content management restrictions are placed on the recording of HD content onto a DVR which is integrated into a receiver.

- 7.5 We also note that Channel 4 and ITV are also supportive in fulfilling these commitments.

Next steps

- 7.6 This statement represents the end of the statutory consultation that we are required to undertake before making amendments to Multiplex licenses, as such we will now be affecting the new license amendment with the BBC proposing to insert the following wording into Condition 6 of the license:

“(8) Nothing in this Condition 6 is to be construed as preventing the Licensee from entering into arrangements for the protection of intellectual property rights in High Definition television services where such arrangements have been approved by Ofcom in writing”

We also will be writing to the license holders for Multiplex C and D asking for their comments on our proposal to make the same changes to those licenses.

- 7.7 Once the proposed wording of the amendment has been agreed with the BBC we will write to BBC Free to View Ltd (as the operator of Multiplex B) setting out the conditions of approval (see Annex 1). The conditions we have set out are:
- The licensing of the Huffman Code look-up tables required to decode electronic programme guide data associated with HD channels must be royalty free.
 - Licenses for the Huffman Code look-up tables required to decode electronic programme guide data associated with HD channels must not contain any conditions other than those required to ensure effective content management framework on the HD DTT platform.

Annex 1

Letter to BBC Free to View Ltd.

Dear [BBC representative],

As you are aware, Ofcom has published its statement relating to the BBC's request for an amendment to the Multiplex B licence which would allow the BBC to restrict access to Electronic Programme Guide ("EPG") datastreams for the purposes of content management.

For the reasons set out in the statement, we have decided to approve the request for a licence amendment and the amended Licence Condition 6 is effective from today.

The amended licence condition allows the BBC to restrict access to EPG datastreams only where such restrictions are made for the purposes of content management and are approved by Ofcom in writing.

This letter constitutes written approval for the BBC to restrict access to EPG datastreams in accordance with the BBC proposals set out in your submission to Ofcom dated 8 December 2009. This approval is given on the condition that:

- The licensing of the Huffman Code look-up tables required to decode electronic programme guide data associated with HD channels must be offered on a royalty free basis.
- Licenses for the Huffman Code look-up tables required to decode electronic programme guide data associated with HD channels must not contain any conditions other than those required to ensure effective content management framework on the HD DTT platform.

Yours sincerely

[Ofcom representative]

Annex 2

Glossary of technical terms

Blu-ray DVD	A high capacity DVD format which is designed for HDTV.
Content management System (also referred to as Copy Management System)-	Any system designed to manage the use of an item of intellectual property in order to restrict its use to those who have the right to do so.
CSA (Conseil supérieur de l'audiovisuel)	the French broadcasting regulator.
D-book	an industry standard specification for DTT equipment which ensures their interoperability.
DRM (Digital Rights Management)	Any system designed to manage the use of an item of intellectual property in order to restrict its use to those who have the right to do so.
Down-convert	The process of producing a lower resolution version of some content, typically to create an SD version of an HD TV programme, so that it can be viewed or recorded on SD equipment.
DTCP (Digital Transmission Content Protection)	A DRM encryption scheme for data networks, which will commonly be used to distribute content in the home in future. The DTCP system can detect whether devices are local or are connected via the internet.
DTG (The Digital Television Group)	A cross-industry body that draws up a specification for DTT equipment which ensures their interoperability.
DTT	Digital Terrestrial Television, currently most commonly delivered through the Freeview service.
DTLA (Digital Transmission Licensing Authority)	The licensing body for DTCP content protection.
DVB (Digital Video Broadcasting)	A set of internationally accepted open standards for digital broadcasting, including standards for distribution by satellite, cable, radio and handheld devices.
DVB-T / DVB-T2 (Terrestrial Digital Video Broadcasting)	DVB-T2 is a second generation standard which is used for Freeview HD broadcasts
DVR	See PVR
EPG (Electronic Programme Guide)	A programme schedule, typically broadcast alongside digital television or radio services, to provide information on the content and scheduling of current and future programmes.
FCC (Federal Communications Commission)	the broadcasting and telecommunications regulator in the USA
Free to air (FTA)	Broadcast signals that are 'in the clear' (unencrypted) and do not require payment at the point of reception
Freesat	A UK-based free-to-air satellite service operated by a Joint Venture between the BBC and ITV PLC.
Integrated Digital Television (iDTV)	an integrated digital television (iDTV) is a television set with a built in digital tuner. iDTVs do not require a separate set-

	top box.
IPR	Intellectual Property Rights
HD/HDTV (High Definition/High Definition Television)	A TV system which provides a clearer, sharper picture through higher resolution. HD transmission may be in 720p, 1080i or 1080p standards, where the number refers to the number of lines of vertical resolution (an HD format must display at least 720 lines), 'p' refers to progressive and 'i' to interlaced.
HDCP (High-bandwidth Digital Content Protection)	A DRM scheme which encrypts and protects the connection between a piece of digital video equipment and an HD display. Typically used on HDMI connections.
HDMI (High-Definition Multimedia Interface)	A connection standard used to convey uncompressed digital signals between items of HD equipment. The standard requires support for HDCP encryption
Huffman Coding	A compression technique which is based on the frequency of occurrence of data items. It replaces the most common items with short codes which are then listed in a 'lookup table'. Access to the lookup table is essential to reconstruct the original information from the compressed version.
Linux	An Open Source (see below) computer operating system, which is based on Unix. It can be used as an alternative to Windows on a PC but is increasingly being used in complex home entertainment equipment such as PVRs.
Multiplex (Mux)	A digital stream or service that carries multiple interleaved signals or streams of information on a carrier at the same time in the form of a single, complex signal. The individual signals are then separated at the receiving end. In TV broadcasting, a multiplex carries a collection of compressed digital channels which typically occupy the same bandwidth as a single analogue service. May be abbreviated to 'mux'.
Ofcom (Office of Communications)	The UK's independent regulator and competition authority for broadcasting, telecommunications and radiocommunications matters.
Open Source	Any one of a number of licensing schemes for computer software where there is not only no charge for the software but any user is free to modify the program. This is possible because the normally confidential source code is made freely available.
Open Rights Group	The Open Rights Group is a non-profit organisation that campaigns to preserve digital freedoms.
PSB	Public Service Broadcasting, or Public Service Broadcaster. The Communications Act in the UK defines the PSBs to include the BBC, the channel 3 licensees, Channel 4, Five and S4C
PVR (Personal Video Recorder)	A device, usually built into a set-top box or TV set, which records content digitally onto a hard disk or flash memory. The unit may have several tuners to record programmes simultaneously, as well as enabling facilities such as live pausing.
Resolution	The number of columns and lines of pixels used to construct a digital image. E.g. 1920 x1080 for 1080i HDTV

Rights Holder	The person or entity that owns the copyright on a given item.
S4C	Welsh national broadcaster.
SD (Standard Definition)	In the UK, this is the 625 line system, of which 576 lines are visible – a lower resolution than HDTV.
SI (Service Information)	Additional data which is broadcast alongside the pictures and sound which indexes the services available. It enables receivers to tune in and receive the broadcast services and also to provide the EPG.
Set-top Box	A receiver/decoder for digital broadcast signals