

Content management on the Freeview HD platform
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Content management on the HD Freeview platform

BBC response to Ofcom consultation of 22 January 2010

Ofcom's consultation document makes extensive reference to the arguments presented by the BBC in its submission to Ofcom of 8 December 2009.

Ofcom has therefore already considered the evidence and information presented in the BBC's original request. Rather than repeat this information in response to this consultation, the BBC has concentrated on a small number of issues where the BBC considers additional information and/or clarification may assist Ofcom's review of the BBC's request.

The issues addressed in this submission are:

1. Reduction in the range of programme content in the absence of content management.
 2. Enabling product innovation.
 3. The flexible recording of broadcast programme content to preserve consumers' rights under UK copyright legislation
 4. Multiplex B licence conditions proposed by Ofcom.
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1. **Reduction in the range of programme content which may result from the absence of content management**
 - 1.1 The BBC notes that the collective response of the Open Rights Group and other joint signatories¹ asks for details of the content which is likely to be prevented from being broadcast in the event that the Freeview HD platform does not provide any form of content management.
 - 1.2 The BBC accepts that it would be helpful to Ofcom to have access to the details of the content which the BBC (and other broadcasters) may be unable to broadcast on the Freeview HD platform in the absence of content management. For its part, the BBC is therefore prepared to supply to Ofcom details of the content which has been supplied to the BBC under broadcast rights agreements which would preclude the broadcast of this content in a HD format on any distribution platform which does not implement content management
 - 1.3 The BBC must request that Ofcom keep confidential information relating to the rights restrictions which individual content rights-holders have insisted upon in current broadcast rights agreements.

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¹ <http://www.openrightsgroup.org/ourwork/reports/bbc-drm-sub>

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2. Enabling product innovation

- 2.1 The BBC is very aware that the proposals to introduce Freeview HD content management have been widely criticised by open source application developers and users. The BBC understands that the open source community would much prefer the BBC to make available all relevant IPR under an open source licence allowing non-commercial and commercial development of Freeview HD enabled devices without any conditions associated with the implementation of content management technologies.
- 2.2 The BBC further notes that many of the respondents to Ofcom's consultation have suggested that the introduction of proprietary IPR (in the form of the Huffman look-up tables and content management technologies) will significantly restrict product innovation.
- 2.3 The BBC suggests that evidence does not support the view that product innovation will be restricted for the following reasons:
- a. there is considerable evidence that consumer electronic products can successfully combine both open source and proprietary software;
 - b. the BBC has confirmed that it will licence the relevant Huffman look-up table IPR on royalty free, fair, reasonable and non-discriminatory terms to any party;
 - c. product innovation is equally likely to arise from products which incorporate proprietary code; and
 - d. the scale of the UK consumer electronics market relative to the usage of DRM-free open source video recorders and servers.
- 2.4 Development of consumer electronic products which incorporate open source software
- 2.4.1 The BBC notes that Humax's Freesat digital television recorder is already built around an open source kernel. Importantly, this product already incorporates very similar HD content management controls, including the Huffman look-up table IPR, which Humax has licensed from the BBC.
- 2.4.2 Under the terms of the relevant open source licences, manufacturers are required to publish modified versions of the open source code used within their products. However, these obligations do not extend to application code, drivers, algorithms or APIs which have not been derived from open source code. Therefore, although Humax publishes the source code for the modified operating system kernel used in its current product², it is not required to publish the user

² <http://www.humaxdigital.com/global/products/opensource.aspx>

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interface application which runs on top of this or other proprietary software or IPR which it has licensed from third parties.

2.4.3 There is no reason to believe that the inclusion of content management technology within the Freeview HD specification or that the necessity of separately licensing SI decompression tables from the BBC will prevent the development of products which are based on or which make use of open source technology. Indeed, there are many examples of commercial products which successfully combine both open source and proprietary code to deliver innovative products. Indeed, it is anticipated that open source code is likely to be utilised in a range content management enabled products including digital television recorders, home servers and network attached storage devices, games consoles and personal media players.

2.5 Fair, reasonable and non-discriminatory access to relevant BBC IPR

2.5.1 As stated in Graham Plumb's letter to David Harrison of 8 December 2009, the BBC is prepared to provide royalty-free licences to access the relevant Huffman look-up tables on fair, reasonable and non-discriminatory terms to any party who undertakes to comply with the associated (IPR licence) conditions in respect of HD content management. The BBC has also confirmed that all parties will be treated equally, including manufacturers or other organisations who wish to make use of this IPR within open source derived products.

2.5.2 Unfortunately, the BBC is unable to agree with several of the respondents to Ofcom's consultation that it would be reasonable (or practical) to licence this IPR to individuals wishing to incorporate this IPR within their own open source digital television recording systems. Such an approach would generate an excessive administrative burden and would create a very high risk that one or more of the individuals licensing the required IPR would re-distribute these materials to others. Enforcement of the BBC's copyright relating to this IPR would be almost impossible in such circumstances and could substantially undermine the confidence of content providers and commercial manufacturers in the overall effectiveness of the content management system.

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2.6 Product innovation based on proprietary software

- 2.6.1 Microsoft's Windows Media Center software provides a highly functional solution comparable with that offered by open source equivalents (such as mythTV and XBMC). Windows Media Centre forms a core component of Windows Vista Home Premium and all mainstream versions of Windows 7 (other than the 'Starter' edition which is intended for low performance netbook type devices). Windows Media Center has already been distributed with millions of home computers which have been purchased in the UK over the last 4 years. Microsoft's Windows Media Player technology is also supported by all versions of Windows released over the last 10 years.
- 2.6.2 From the perspective of content providers, Microsoft's windows operating system provides a secure environment with reliable DRM and content management controls for media. Access to these content management technologies is also standardised through application program interfaces which make it relatively simple for a developers to provide a secure data path for HD content between a DVB-T2 receiver, through a hardware accelerated MPEG4 decoder and on to a display via a HDCP protected digital interface.
- 2.6.3 Similarly, Apple's iTunes software, Quicktime media format, iPhone OS (and iPod OS) and Apple TV products are all built around proprietary software. All of these products incorporate effective DRM technologies which are intended to protect the value of digital media. Many of these products have been enormously successful and are the most widely owned and used digital media products in the UK. The commercial and critical success of these products is unlikely to reflect a lack of product innovation or perceived inflexibility of these products on the part of consumers.
- 2.6.4 Clearly, both open source enthusiasts and open rights proponents are unlikely to welcome any of the DRM and content management features provided by Microsoft or Apple. However, for the presence of these features is almost always transparent to the vast majority of home users who currently choose to use Windows and/or Apple based platforms which provide the ability to listen to, view and enjoy DRM protected media content with little or no technical difficulty.
- 2.6.5 Currently, the established market share of Windows systems ensures that almost all broadcast TV capture hardware, is supplied with Windows driver software and Windows compatible viewing and recording application software.
- 2.6.6 The BBC does not agree that there is any lack of innovation in the functionality or capability of products which are compatible with Windows or that the integration of Freeview HD content management into these products is likely to restrict anything other than copying of

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HD content onto devices which do not support an appropriate level of content management protection.

- 2.7 **Scale of the UK consumer electronics market relative to the use of DRM-free open source software system**
- 2.7.1 The BBC has been unable to find any statistics for the use of mythTV (or other similar open source applications which provide digital television recording functionality either under Linux or Windows). However, it is accepted that there is a highly enthusiastic community of users of this type of software within the UK, who would want to view and record Freeview HD content. Unfortunately, for the BBC to support the requirements of these users (by placing the Huffman look-up tables in the public domain) the effectiveness of the content management compliance regime would be compromised for all broadcasters and all consumer electronic products. The BBC is convinced this would not be in the interests of all Freeview HD viewers, who would not obtain free-to-air access to some acquired content from the BBC, ITV and C4.
- 2.7.2 In contrast with the relatively small numbers of DRM-free open source video recorders and servers, there are now in excess of 2 million Freeview+ digital television recorders and substantially more than 4 million Sky HD+, Sky+, Virgin Media V+ and Freesat digital recorders in use within the UK.
- 2.7.3 The BBC also does not accept that there is likely to be a wide range of fully featured products or systems in the future which do not provide content management support (for example because they are built on wholly open source software). Irrespective of Ofcom's determination in relation to content management for Freeview HD, the presence of content management systems for almost all HD content which is delivered by other broadcast platforms, (legitimate) internet distribution outlets or Blu-ray physical media, is likely to make the incorporation of content management functionality essential in all common consumer electronics products and systems. For example, the markets for HD capable personal media players or media servers which do not include content management functionality would be almost insignificant, as they would provide consumers with very restricted access to (legally obtained) HD content.

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3. **Flexible recording of broadcast programme content to preserve consumers' rights under UK copyright legislation**
 - 3.1 The BBC recognises that in addition to the broadcast time-shifting rights of domestic consumers, current UK legislation provides for the copying of broadcast content for:
 - (i) the purposes of instruction or preparation of instruction in the making of films or film sound-tracks;
 - (ii) educational purposes by educational establishments (usually under the terms of the ERA licensing scheme); and
 - (iii) 'fair dealing' for the purposes of criticism or review or the reporting of current events.
 - 3.2 It remains the BBC's view that the proposed Freeview HD content management system will not interfere with any of the above activities even in respect of content which is signalled in the most restrictive ('Managed Copy') content management state; nor should it prevent consumers from being able to rely on any exceptions introduced in the future including exceptions which may permit 'format-shifting' of content for personal use or the recording and copying of broadcast audio-visual works for non-commercial research or private study.
 - 3.3 However, the BBC has been made aware of concerns on the part of libraries, archives and larger educational establishments in relation to how the proposed content management system could restrict their legitimate and reasonable use of recordings of HD broadcasts. In particular, it has been suggested that difficulties could sometimes arise where it is necessary for these larger organisations to create multiple HD copies of content which has been broadcast in the most restrictive content management state or where it is necessary to view HD copies of broadcast content over wide area networks. The BBC notes that although current UK legislation would not necessarily permit these particular usage models for recorded broadcast content (even in educational establishments, libraries and archives), we can confirm that the Freeview HD content management system is flexible enough to accommodate potential additional permissions which could apply to these organisations in the future.
 - 3.4 Over recent weeks the BBC has discussed these issues with representatives of the British Library and the British Film Institute's archive. These conversations indicate that although their requirements are currently met using standard definition recordings (which will have no restrictions applied), at some point in the future, they may wish to retain HD format recordings of broadcast content. In these discussions the BBC has explained the operation of the proposed content management system and has discussed a range of approaches which would not restrict their appropriate and legitimate use of HD broadcasts.

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- 3.5 The BBC confirms that it would be prepared to engage with further discussions with representatives of larger educational establishments, and those libraries and archives which qualify as 'designated bodies' under Section 75 of the CDPA, in order to ensure that the proposed content management system does not restrict their legitimate activities.
- 3.6 It is very important to emphasise that the application of the content management will not affect the vast majority of educational applications, criticism or review or news reporting using recorded broadcast content. Critically, individuals and all schools and smaller colleges are likely to be able to use standard consumer electronic Freeview HD compliant recoding and viewing equipment without encountering any practical restrictions. For example a single 1TB hard disk based digital television recorder will record around 250 hours of HD content. Such systems can then be networked with media servers and network enabled storage devices to provide effectively unlimited storage. Or, in legitimate applications, where there were a requirement to make multiple Blu-ray copies of broadcasts it would be possible to use two or more consumer Blu-ray recorders to simultaneously record content off-air

4. Additional Multiplex B licence conditions proposed by Ofcom

- 4.1 In section 6.4 of Ofcom's consultation document Ofcom proposes a range of conditions which Ofcom would apply to any approval permitting the requested changes to DTT Multiplex licence which allowed the linkage of the Huffman look-up tables used to compress EPG data to compliance with the content management requirements of the D Book.
- 4.2 The BBC accepts that it is appropriate and necessary that Ofcom's conclusions following this consultation process should clearly identify the conditions and undertakings which the BBC (and other public service broadcasters) have accepted in relation to the application and use of the proposed system.
- 4.3 For its part, the BBC confirms that is able to accept the majority of conditions proposed by Ofcom in the preliminary conclusions, specifically:
 - 6.4.1 that the BBC will respect current usage protections under copyright law and any future extension of these protections, such as those recommended by the Gower's Review of Intellectual Property;

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- 6.4.3 that the BBC creates with other public service broadcasters a ‘user friendly’ consumer guide to content management which would be published on their websites and made available to manufacturers and retailers;
 - 6.4.4 that the BBC facilitates 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;
 - 6.4.5 that the BBC is only able to require content management technologies in receivers that form part of the DTG specifications;
 - 6.4.6 that the BBC licenses its Huffman Code look-up tables on a royalty-free basis and on fair, reasonable and non-discriminatory (FRND) terms to any party who undertakes to comply with the content management standards agreed and specified by the DTG;
 - 6.4.7 that content management cannot be applied to SD content, and down converted SD versions of HD content;
 - 6.4.9 that only the three proposed content management states: unrestricted copy, multiple copy and managed copy can be applied to free to air HD content;
- 4.4 The BBC also confirms that with only minor clarification it can accept the following condition:
- 6.4.8 that no functional restrictions are placed on the recording of HD content onto an DVR which is integrated with a receiver;
- 4.5 This minor revision will ensure that it is possible for the DTG D-Book to continue to mandate the encryption of HD content which is recorded and stored within an integrated digital television recorder. Without this condition it might be trivially easy for users to transfer unencrypted (and hence unprotected) HD content from an integrated digital television recorder to another connected device. Importantly, the requirement to implement encryption of recorded HD content represents a technical restriction which creates no functional limitation for users.
- 4.6 The BBC notes that Ofcom has proposed two additional conditions relating to the operation of an “appeals” process and the application of a minimum level of content management [restrictions]:
- 6.4.2 that the BBC will establish an “appeals” process whereby viewers 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;
 - 6.4.10 that free to air HD broadcasters only apply the minimum level of content management needed to secure HD content from rights holders.
- 4.7 The BBC is concerned that, as currently drafted, these conditions are likely to create significant difficulties for the BBC and Ofcom.
- 4.8 In respect of the introduction of the proposed “appeals” process, the BBC considers it will be essential that Ofcom specify its expectations in relation to this process. The large number of responses to this

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consultation process indicate that a significant number of individuals and organisations are likely to be disappointed were Ofcom to conclude that the introduction of content management was (on balance) acceptable. Without clear limitation to the scope and range of issues which would be subject to an appeals process it is highly probable that the BBC (and indirectly Ofcom³) would be overwhelmed by a large number of complaints from many individuals, relating to the content management controls applied to many different television programmes.

- 4.9 It is not appropriate that the proposed appeal process should require broadcasters to review the conclusions arrived at by Ofcom within the current consultation process. It is therefore vital that the conditions associated with any Multiplex or PS-DTPS licence amendments should not create a requirement to individually review every possible objection which has already been raised (or which may be raised) by those who are opposed to the introduction of the proposed content management system.
- 4.10 For any appeals process to be workable, the conclusions of the current consultation process and associated licence conditions will need to make it clear that Ofcom is satisfied that the minor limitations in consumers use of content which arise from the proposed content management system do not impinge the rights of citizens and consumers in respect of current copyright legislation.
- 4.11 The BBC wishes to emphasise that it accepts that an appeals process could be helpful, provided that the scope of this process is clearly defined. However, for any appeal process to be workable, it will be essential that the conditions associated with any Multiplex and PS-DTPS licence changes clearly define the scope and range of appeals which broadcasters would be expected to respond to.
- 4.12 The BBC suggests it would be appropriate for each broadcaster's appeal process to provide citizens and consumers the opportunity to question and challenge:
 - a. any change (or lack of change) in the application of Freeview HD content management following a change in UK copyright law;
 - b. any change (or lack of change) in the application of Freeview HD content management following a change in the licensing conditions associated with the content management technologies which are incorporated within the DTG D-Book standard; and

³ In these circumstances it is highly likely that individuals who were not satisfied either by the processing of their complaint or output of the appeals processes operated by the BBC or other public service broadcasters would complain to Ofcom.

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- c. any broadcaster which is demonstrably not complying with conditions imposed by Ofcom in relation to the introduction of Freeview HD content management.
- 4.13 Ofcom's proposal to include conditions within Multiplex and PS-DTPS licences which require broadcasters to "only apply the minimum level of content management needed to secure HD content from rights-holders" is also likely to create a high risk of challenge from those who are opposed to the introduction of any form of content management.
- 4.14 The BBC is very concerned that Ofcom's proposed condition relies on a highly subjective judgements on the part of broadcasters, content providers and any individual who does not agree with the content management applied to any particular programme as broadcast.
- 4.15 The BBC notes that each public service broadcaster is subject to different economic, regulatory and technical constraints. It is therefore absolutely appropriate that each broadcaster should be free to negotiate rights agreements which reflect these circumstances.
- 4.16 Consequently, each broadcaster must have the freedom to determine how they will signal the content management applied to any particular programme within the framework provided by the content management system.
- 4.17 For these reasons, the BBC is of the clear view that this condition (6.4.10) should not be included in any Multiplex or PS-DTPS licence change and there should be no right of appeal to each broadcaster in relation to the content signalling applied to any particular programme.

1 April 2010