

Ofcom BBC DRM consultation response

Signatories:

1. Open Rights Group
2. Electronic Frontier Foundation
3. Free Software Foundation
4. Somethin' Else

1. Summary

Open Rights Group (ORG) was founded in 2005 by 1,000 digital activists. It has since become the UK's leading voice defending freedom of expression, privacy, innovation, consumer rights and creativity on the net. ORG is pleased to contribute to this Ofcom consultation.

ORG believes that the BBC has not made a case for adding DRM to its free-to-air broadcasts. The DRM proposed by the BBC (like all DRM systems) will not be adequate to prevent unauthorised redistribution of FTA broadcasts. Further, the existence of other, DRM-free versions of the same content (such as US FTA broadcasts) means that would-be redistributors can dispense with the bother of breaking the BBC's DRM and redistribute copies of the content that have originated from other sources, making the case for DRM even less sensible.

However, this DRM failure will not have a material effect on the UK DTT rollout. The threats of unspecified copyright holders to boycott DTT without DRM are simply not credible; they are a re-hash of threats made over US broadcasts seven years ago, threats that rightsholders have not carried out. Furthermore, if access to the unspecified imperilled content *is* critical to DTT rollout, then this measure is inadequate to ensure that it will be present on DTT if the BBC gets its way, as the BBC has not produced any promises from rightsholders to the effect that they will license to DTT once DRM is in place.

Rather, the addition of DRM will *slow down* the DTT rollout, by punishing early adopters whose sets are not capable of receiving a DRM-restricted stream. The compliance-and-robustness rules that accompany DRM schemes (including the proposed DTLA scheme) prohibit the inclusion of user-modifiable components and software in devices. The ability of users to modify their own equipment is a great historical source of innovation, especially in TV. The most popular free/open source DTV devices cannot comply with the DTLA requirements.

The use of DRM by the BBC will have secondary effects on British competitiveness: by punishing, rather than fostering, tinkerers, the BBC undoes its long and honourable history of promoting technical literacy in Britons, and this at a moment when technical literacy is a synonym for national competitiveness in the global market.

There is no adequate mechanism whereby consumer rights can be enshrined in a DRM scheme. This is because consumer rights in technology are a moving target, always in flux in response to new flexibilities offered by technological advances. By extending copyright into control over devices -- rather than control over the uses those devices can be put to -- DRM gives incumbents a veto over the degree to which their markets may be disrupted by technology. Incumbents -- particularly copyright holders -- have a poor track record when it comes to gracefully permitting disruptive innovation into their markets. Rightsholders have attempted to prohibit or restrict technologies such as the VCR, the phonograph player, the cassette player, the jukebox, cable television, the radio, the remote control, the MP3 player, and many others. It is impossible to know, *a priori*, whether a given new technology will find itself welcomed by lawmakers and the courts after proving its worth in the marketplace, or whether they will ban it, but once those who stand to lose by a new technology are given the power to block it without resorting to courts or lobbying, it's a sure bet that innovation will suffer.

By allowing the BBC to add DTLA-compliance as a condition for receiving licence-funded broadcasts, Ofcom is abdicating a large part of its regulatory authority. Once the BBC is locked into licence regime governed by the DTLA, Ofcom will not be able to order it to, for example, relax the compliance and robustness terms for decoding its broadcasts in order to allow for the creation of assistive devices that use the data scrambled by the BBC to render secondary information used by people with disabilities to enjoy public service television.

Ofcom will do the licence-paying public no favours by allowing the BBC to reduce the functionality of their receivers and to put British innovation at the mercy of a risk-adverse cartel of incumbents from the consumer electronics and entertainment industry. This will not reduce unauthorised redistribution, and it will have negative side-effects. Ofcom should not allow the BBC to add DRM to its broadcasts.

2. Consultation questions

2.1 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?

ORG does not believe that the BBC has made a case that DTTA DRM will broaden the range of content available on DTT.

2.1.1: No catalogue of content to be withheld in the absence of DRM

Neither this consultation nor the one that preceded it has included any attributable, credible threat to boycott DTT in the absence of copy-restriction technology. No rightsholder is on record at present of making such a threat. No list of content that will not be licensed in the absence of a regulatory technology mandate is in evidence.

Instead, the "BBC submission in response Ofcom's letter of 9 November 2009" ("the BBC's submission" hereafter) references unspecified "rightsholders" in unspecified negotiations for unspecified "content." Neither Ofcom nor any interested party is capable of evaluating the potential cost to DTT takeup from a boycott triggered by the absence of DRM, unless a list of the content that will not be made available on DTT in the absence of the proposed mandate is entered into evidence.

Signatories to ORG's submission include prominent BBC suppliers such as Somethin' Else Ltd. These firms and many others stand ready to supply high-quality HD content to the BBC with or without a mandate.

2.1.2 No catalogue of content to be made available in the presence of DRM

Just as the BBC has not proffered any list of content that will not be made available in the event that its submission is rejected, it has not made available any catalogue of content that *will* be made available in the event that regulatory approval for DRM is given.

If the unspecified "rightsholders" in the BBC's submission have made promises regarding "content" that will be made available for transmission in DTT, these promises are not in evidence.

Thus the licence-payer is being asked to take on board restrictions to their televisions with no evidence of harm to come in the absence of these restrictions, and no covenant enumerating the benefits the public will receive if these restrictions come to pass.

ORG believes that rightsholders are reluctant to go on the record with blackmail demands for DRM because of the negative publicity that would attend such a public demand. They fear that viewers will punish them for these demands in the marketplace, boycotting their DVDs and other offerings.

ORG believes that Ofcom should not allow the BBC to shield rightsholders from the market consequences of their demands. Regulation should not be enacted on behalf of anonymous firms who will not even go public with their threats, nor promise any *quid-pro-quo* in exchange for the public's regulatory largesse.

2.1.3 Boycott threats are not credible

This is not the first market in which prominent multinational rightsholders, including TV production firms and major sporting leagues, have promised a boycott of HD DTT without an accompanying DRM mandate. From 2003 to 2005, major US rightsholder groups campaigned for a comparable DRM mandate (the "broadcast flag") from the American regulatory equivalent to Ofcom, the Federal Communications Commission. Rightsholder submissions included Viacom's promise that "if a broadcast flag is not implemented and enforced by Summer 2003, Viacom's CBS Television Network will not provide *any* programming in high definition for the 2003- 2004 television season."¹

¹ Comments of Viacom, in the Matter of Digital Broadcast Copy Protection, before the Federal Communications Commission <<http://fjallfoss.fcc.gov/ecfs/document/view?id=6513394608>

The broadcast flag was never "implemented and enforced." In 2005, the United States Court of Appeals for the D.C. Circuit ruled that the FCC did not have the authority to create a broadcast flag mandate -- because regulating devices downstream of receivers exceeded its Congressional mandate -- and the broadcast flag proposal died.

Neither Viacom nor other rightsholders ever made good on their threat to boycott US DTV broadcasts. On June 12, 2009, the US analogue switchoff was completed. The CBS Television Network continues to broadcast its offerings in HD on American airwaves, though no broadcast flag or other copy-prevention system is in place.

2.1.4 No evidence that DRM will increase investment

The US lesson is instructive. The American digital television rollout is complete. No DRM is in place. Any FTA HD broadcast can be captured at full resolution in unencumbered form and freely distributed on the Internet, without any mechanism for enforcing territorial rights.

Ofcom's consultation document identifies the ability to enforce territorial rights as a spur to investment². Indeed, many high-value American dramas that have delayed UK release windows are routinely traded on P2P networks in the UK³ or ordered on DVD from overseas vendors to be played on commonly available region-free players.

If Ofcom's hypothesis about a decrease in investment attending the absence of DRM for enforcing territorial rights, it would be reasonable to assume that US investment in expensive programming would have dwindled, especially as the absence of a means for enforcing territorial restrictions means that UK viewers -- the largest secondary market for English-language UK broadcasts -- would have fallen away.

2.1.5 Huffman-table scrambling will not prevent unauthorised redistribution

Throughout the consultation and the BBC's submission, Huffman table scrambling is described as "effective copy management." However, as the BBC's own letters to Ofcom state, this technique is not expected to withstand a technically sophisticated attack⁴.

Even if rightsholder threats and promises are to be believed, the proposed use of Huffman table scrambling as a means to force manufacturers to implement DTLA restrictions is not adequate to achieve this goal -- by the BBC's own admission⁵, as verified by the independent experts cited above.

Thus, if Ofcom believes that the absence of "effective copy management" is a threat to DTT take-up, then the measures proposed by the BBC should be scrapped for failing to provide "effective copy management."

2.1.6 Prohibitions on desirable features will not drive DTT take-up

In 4.16.1 of this consultation, Ofcom asserts that

"A wider range of attractive HD content enabled by content management on DTT would provide a greater incentive for consumers to invest in HD receivers, providing greater economies of scale for manufacturers and lower receiver prices for consumers. This would create a virtuous circle whereby increasing HD receiver sales encourage the launch of more HD services, which in turn drives receiver take-up."

However, this assertion isn't accompanied by any supporting evidence.

A survey of current devices for DVD -- the fastest-adopted video technology in the history of the world⁶ -- shows that of the 10 top-selling DVD players on offer at Amazon.co.uk, 70

² Consultation document 4.12.1 "Maximising investment in UK produced HD content by UK broadcasters and independent producers, by improving their ability to secure additional revenues from Blu-ray discs sales and selling HD content rights in markets outside the UK"

³ Millions turn to net for pirate TV, BBC News <<http://news.bbc.co.uk/2/hi/technology/6151118.stm>>

⁴ See, for example <<http://svn.mythtv.org/trac/ticket/5365>>, <<http://www.digitalspy.co.uk/forums/showthread.php?t=837707>>, <<http://www.digital-kaos.co.uk/forums/f73/can-you-get-freesat-normal-satellite-receiver-2950/>>

⁵ "...[N]o system provides a deterrent to determined hackers..." Alix Pryde letter to Ofcom, 27 Aug 2009

<http://www.ofcom.org.uk/tv/ifi/tvlicensing/enquiry/ofcom_bbc.pdf>

⁶ "It's unreel: DVD rentals overtake videocassettes," *Washington Post*, June 20, 2003

percent are out-of-compliance with the DRM requirements set out in the DVD-CCA rules for content restriction, advertising "multi-region" support. This evidence contradicts Ofcom's conclusion above, suggesting instead that consumers prefer less-restricted devices and opt for them when they are present in the market. To ORG, this suggests that fewer, not more, restrictions are key to driving consumer adoption of DTT. This conclusion is supported by Ofcom's own consultation, at 4.27, where Ofcom writes,

"Whilst any supply of HD receiver equipment with no content management may initially only come from smaller, niche manufacturers, the BBC argues in section 3.3.2. D of its submission that if major manufacturers perceive that they are losing market share to these suppliers they may respond by also supplying products without content management. The resulting effect on the DTT receiver market could lead to further growth in sales of receivers without copy management to the detriment of products with content management."

In other words, consumers want devices with more desirable features, will stay away from platforms that have fewer desirable features, and cannot be swayed by a sales pitch that reads, "DTT: Like telly, except it does less of the stuff you love!"

ORG disagrees with the conclusion Ofcom draws in 6.2, "HD DTT platform risks being placed at a disadvantage by comparison with other platforms if it is unable to provide a copy management system." Rather, ORG believes that DTT will be at an *advantage* relative to other DTV platforms if its proponents can advertise, "DTT: The only DTV platform that hasn't been crippled by DRM!"

2.2 Q2: Do you agree that the BBC's proposed multiplex licence amendment represents the most appropriate means for securing an effective content management system on HD DTT?

ORG does not believe that the BBC's proposal to scramble Huffman tables can be classed as "effective content management."

2.2.1 The BBC admits that this is inadequate

In the BBC's opening letter to Ofcom in this matter, Alix Pride noted "...[N]o system provides a deterrent to determined hackers...". This view of Huffman table scrambling is confirmed by independent security analysts⁷.

In practice, the simplest way to break a DRM scheme is to simply find a copy that someone more technically sophisticated than you has already broken and added to a P2P network⁸. Thus, where a DRM can be readily broken by even a small proportion of the viewing public, it is assured that the entire viewing public will have access to DRM-free versions of each programme⁹.

Thus, this scheme cannot be considered effective at carrying out the task set by Ofcom in the consultation at 3.1.2:

Reduce the risk of the unauthorised distribution of HD content on pre-recorded media and the internet after it has been broadcast free to air, and hence, help secure greater investment in UK produced HD content by improving the ability of producers to gain additional revenues from Blu-ray discs sales and selling HD rights in broadcast markets outside the UK."

And at 4.11:

The content management system proposed by the BBC for the DTT platform would enable broadcasters to control how HD content can be copied and redistributed over the internet after it has been broadcast free-to-air.

<<http://washingtontimes.com/news/2003/jun/20/20030620-113258-1104r/>>

7 Ibid.

8 "DRM, and the First Rule of Security Analysis," Prof. Ed Felten <<http://freedom-to-tinker.com/blog/felten/drm-and-first-rule-security-analysis>>

9 This finding is well-established in other DRM realms; for example, in 2007, when the iTunes Store was still using DRM to restrict its music, the P2P monitoring firm Big Champagne found that the mean time between a DRM-locked, iTunes-only release and the availability of the same track without DRM on P2P networks was 180 seconds.

<<http://spectrum.ieee.org/consumer-electronics/standards/imagine-theres-no-drm-i-wonder-if-you-can>>

2.2.2 Inadequate DRM leads to more DRM proposals

When the broadcast flag matter was before the US FCC, rightsholder groups averred that they believed that the broadcast flag would be sufficient for their needs, and promised that they would not seek additional DRM mandates beyond the broadcast flag.

However, the same companies simultaneously struck a new working group, the Analog Reconversion Discussion Group (ARDG), to hammer out details of a follow-on mandate that would restrict "devices capable of performing an analogue-to-digital conversion"¹⁰ (this was also described as "plugging the Analog Hole").

This Analog Hole mandate was much broader and farther-reaching than the initial broadcast flag proposal, and it was proposed under the rubric that it was required to make the broadcast flag effective.

The BBC's own admission that Huffman table scrambling will not prevent infringers from putting DRM-free copies on P2P networks, combined with the absence of any promises from rightsholders that this measure will nevertheless be sufficient, points to future DRM mandate demands.

2.2.3 The BBC proposal bars user-modifiable equipment

The BBC proposal is inappropriate because it requires that receivers and the sinks that sit downstream from them be designed to resist end-user modification. This is outlined in the DTLA licence agreement, which states

[The] Licensed Product [must be] designed and manufactured so there are no service menus and no functions (such as remote-control functions, switches, check boxes, or other means) that can turn off any analog protection systems, output restrictions, recording limitations, or other mandatory provisions of the Specification or Compliance Rules¹¹

This prohibition on components and code for which users are allowed to understand, improve upon, and distribute their improvements is the televisual equivalent of a MOT mandate that required auto-manufacturers to weld cars' bonnets shut.

The means of industrial production that arises from licences and technologies that encourage user modification, improvement and distribution, broadly called "Commons-based peer production"¹² has been responsible for much of the innovation in ICT that we now enjoy today. The GNU/Linux operating system, the Apache web-server, the Firefox browser, and many other key technologies emerged from legal and technical regimes that encouraged "tinkering." These technologies turn over USD8 billion¹³ in annual worldwide business, and are widely considered to be superior to their proprietary equivalents.

DRM schemes require that computers keep secrets from their owners. Free/open source software is built on the premise that every computer owner should have access to the complete functional specifications and code for her device. These are irreconcilable differences, notwithstanding Ofcom's assertion at 3.7.

Ofcom's states in the consultation document at 3.7:

These parties could include consumer electronics manufacturers and also organisations that wish to make use of the BBC's Huffman Codes within a system incorporating Open Source software.

But this standard ("incorporating Open Source software") falls short of the mark. The problem isn't that the BBC's proposal will lock out all free and open source software. Rather, it will lock out any further free/open development of technologies that can be used to receive DTT broadcasts. The DTLA prohibition on user-modifiable components means that systems must be designed so that any free/open source software is locked away from the user (something that violates an ever-increasing number of free/open licences).

10 <<http://www.cptwg.org/Assets/Presentations/ARDG/ARDG%20page.htm>>

11 <<http://www.dtcp.com/data/AA06302007.pdf>>

12 <<http://www.benkler.org/CoasesPenguin.html>>

13 Worldwide Open Source Services 2009-2013 Forecast, IDC, Gard Little, Elaina Stergiades, <<http://www.idc.com/getdoc.jsp?containerId=219918>>

Practically speaking, this means that free/open devices and technologies such as MythTV -- one of the most powerful, feature-rich DVR platforms, which is made freely available to any firm that wishes to distribute it for its hardware -- will be shut out of the market for future UK broadcast applications. Likewise, free/open drivers for computer DTT receiver cards (which are increasingly incorporated into set-top appliances) will not be able to get a licence to incorporate the Huffman table descrambling keys, because these drivers are by their nature incapable of keeping these keys secret from the computer's owner.

The BBC is well aware of this. Recently, it took steps to block the free/open Flash video player from accessing its iPlayer service¹⁴ because the free/open player could not be prevented from saving video-streams to users hard drive. While the BBC could have added a few lines of code to block video-saving, anyone who wanted to re-enable the feature would only need to remove those additional lines, because the free/open licence requires the BBC to publish its changes on terms that allow subsequent modification and redistribution.

Ofcom understands this as well. The inability of user-modifiable equipment to be certified for use in the BBC proposal is set out in the consultation document at 3.9:

"HD receivers that do not support copy management do not respond to the content management state flags attached to the free to air broadcasts and provide HD content outputs without encryption. This would make it technically feasible for HD content to be copied without restriction and also to be distributed over the internet, irrespective of whether this is permitted or not by the rights holder. Under the BBC's proposal these receivers would be unable to access SI data and hence provide an EPG for HD services."

Ofcom should not allow the BBC to exclude the entire free/open development methodology from the DTT world. Free/open systems have lower barriers to entry, making them well suited to entrepreneurial efforts and small traders who are able to use the free access to these tools and systems to compete effectively in the global marketplace.

2.3 Q3: Do you agree with the proposed change to Condition 6 in the Multiplex B Licence?

ORG does not agree with the proposed change.

2.3.1 This is inconsistent with the BBC's Public Value principles

The BBC's own articulated principles of providing public value¹⁵ run contrary to the idea of placing prior restraint on how licence-payers may use their televisions, and on which receivers may be offered to the market.

2.3.2 This is bad for competition

For small British traders and entrepreneurs, the existence of free/open source platforms for use with DTT creates new competitive markets. British AV installers and computer sales and support people have the option of selling competitively priced home-theatre PCs and integrated set-top boxes where the software comes at no charge.

Likewise, free/open source DTT receiver software allows space for British entrepreneurs to create retail products for the British market, using well-configured commodity hardware and free/open software software.

Finally, DTLA-compliance necessarily excludes any manufacturer that wishes to include features that the DTLA doesn't wish to see in its devices. This is the soul of competition: the right to produce lawful, competing products whose virtues are different from those of your competitors'.

2.3.3 The BBC is a public service broadcaster

At 4.13 in the consultation document, Ofcom explains its willingness to allowing the BBC to use DRM with a comparison to other DTV providers:

¹⁴ <<http://feeds.arstechnica.com/~r/arstechnica/index/~3/ZeZ2IXoHXM8/bbc-blocks-open-source-software-from-iplayer-video-service.ars>>

¹⁵ http://www.bbc.co.uk/bbctrust/assets/files/pdf/regulatory_framework/pvt/public_value_practice.pdf

"Other digital TV platforms in the UK (Freesat, Virgin, Sky, BT Vision) already apply content management to the HD output on receivers used to connect to HD displays."

These providers are not licence-funded public service broadcasters. Unlike the BBC, they do not compel the viewing public to pay them an annual fee in exchange for public value. They are commercial concerns. ORG would prefer that they did not restrict their offerings with DRM, but at least there is a market transaction taking place when a viewer opts to buy these DRM-locked services. There is no such voluntary transaction in place for the BBC. The comparison is irrelevant.

2.3.4 DTLA will become the de-facto regulator of DTT in the UK

If the BBC is allowed to become a party to the DTLA agreement, the terms of that agreement will trump Ofcom's regulations. For example, if Ofcom orders the BBC to give descrambling keys to a free/open software project tailored to visually impaired people, the BBC will not be able to do so because this would breach its agreement with the DTLA¹⁶. DTLA has made no covenant to limit its restrictions to those uses that are lawful in the UK, and some of its restrictions already prohibit lawful activities, such as using MythTV or a free/open driver for a video-tuning card to record and watch a DTT programme.

Furthermore, parts of the DTLA agreement are subject to confidentiality restrictions, which means that the full rules governing DTT in the UK cannot be published and debated (and even if they could, they would not be subject to democratic reform, because DTLA is not beholden to the licence-paying public in any way).

2.4 Q4: Do you agree that Multiplexes C and D should be granted a similar amendment to their Licences as Multiplex B?

Please see section 2.3, above, for ORG's response to this question.

2.5 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?

ORG does not believe that the BBC proposal is sufficient to guarantee present and future legitimate uses of content.

2.5.1 Using non-DTLA equipment is lawful and legitimate

In the consultation document at 5.11, Ofcom describes the BBC's proposal to ensure that its DRM does not unduly restrict lawful uses:

"Ofcom also considers that the BBC's proposal to create an "appeals" process whereby viewers who believe that their lawful usage is being impinged by the BBC's use of content management could raise their concerns directly with the BBC, rather than having to write to the Secretary of State, would provide consumers with a much more convenient and practical means for resolving these types of issue."

This process will not be sufficient to safeguard lawful uses. Firstly because *receiving a DTT broadcast on non-DTLA-certified equipment is lawful*. ORG is not aware of any statute passed by Parliament that would limit viewers to equipment that complies with the DTLA specification. The entire basis of the BBC's proposal is to forbid a lawful activity.

Further to this, ORG is not aware of any statute that limits licence-payers to purchasing and using equipment that has been designed to resist modification and improvement. ORG believes that all DRM systems share this requirement, however, and that any BBC DRM proposal will necessarily prohibit this lawful, legitimate activity

2.5.2 The appeals process will not be sufficient

The proposed "appeals" process (described above) is only cursorily sketched-out in the BBC proposal (by contrast, the DRM component of the BBC's proposal is explained in great detail), so it is difficult to critique the particulars of this process, as it has no particulars.

16 Ibid.

Nevertheless, ORG is highly sceptical that an appeals process can be sufficient for the described purpose. Such a process presupposes that every legitimate user of licence-funded programming has the nous to approach a deliberating body and plead her case. This is untrue on its face: for example, young children are enthusiastic and legitimate re-users of content (something the BBC recognises in its own educational content¹⁷), but these children are not necessarily equipped to plead their case to a review board, even if they could get time off school to do so, travel alone to meet with the review body, and so on.

2.5.3 The BBC can't overrule DTLA

The BBC's public service mandate demands many activities that run contrary to the strictures. For example, the public service mandate requires the BBC to serve disabled groups, and this service is materially improved if assistive information in the Huffman tables is available to free and open source software developers.

Likewise, the BBC's mission is best served when its programming can be used in the course of media literacy projects, which often involve the manipulation and analysis of programmes with free/open applications. This media literacy agenda is best served when free/open tools (already prevalent in educational environments) are able to access the BBC's content.

ORG does not believe that the DTLA can or will grant licences to free/open tool-makers for either of the uses enumerated above. ORG believes that the DTLA's existing covenants to its stakeholders would prevent it from doing so, even if it could be persuaded to.

2.6 Q6: Do you agree that the BBC's proposed choice of content management technologies will have only a negligible impact on the cost of HD DTT receivers and their interoperability with other HD consumer equipment?

ORG does not agree that the impact of allowing DRM restrictions on DTT programmes will be negligible.

2.6.1 The cost of banning open development models is not "negligible"

DTV technologies like MythTV have been developed through a methodology that demands that users be free to inspect, improve and disseminate their tools and technologies. Many of these technologies are presently available only under free/open licences that prohibit their use in connection with DRM. By adding a DRM requirement to its DTT signals, the BBC forces would-be market entrants to eschew these powerful, free tools, and requires them to bear the cost of redeveloping these technologies from scratch.

This cost is hard to estimate, but it is certainly not "negligible." In the consultation document, at 5.19, Ofcom asserts

...[T]he cost of implementing these content management systems in these higher end HD DTT receivers will have a negligible impact on their cost to consumers and notes that the licensing cost for DTCP is in the range of \$0.02 to \$0.10 per device.

This is only true if you ignore the additional cost of having to redevelop free/open technologies using proprietary methodologies. This expense may be great indeed: a study recently estimated the value of new development in the Linux kernel in 2008 at EUR225 million¹⁸. However, these costs were borne across many organisations and individuals, and all parties are welcome to enjoy their benefits.

By prohibiting user-modifiable devices, Ofcom creates a substantial new cost for those vendors -- such as those who integrate and sell MythTV systems -- who participate in the DTV market.

2.6.2 DTLA licensing is not "fair, reasonable and non-discriminatory"

In the consultation document, at 5.2.4, Ofcom asserts that the DTLA licensing regime is "fair, reasonable and non-discriminatory." However, the DTLA licence agreement clearly prohibits devices that rely on their capacity to be modified by their owners for their ongoing

¹⁷ <http://en.wikinews.org/wiki/Interview_with_BBC_Creative_Archive_project_leader>

¹⁸ <<http://iri.jrc.ec.europa.eu/concord-2010/posters/Garcia-Garcia.ppt>>

development¹⁹. This licence term cannot be characterised as non-discriminatory.

Further, parts of the DTLA licensing conditions are not available to the general public and are restricted by non-disclosure agreements. Parties to this consultation thus cannot adequately assess the fairness of those terms, because the terms themselves are not known or in the record.

2.7 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?

2.7.1 DRM systems exercise prior restraint on disruptive innovation

The existence of a DRM licence requirement for those to participate in the DTT market gives a veto to incumbent content companies and CE companies, who stand to lose if an innovator enters the market with a disruptive technology that upends their business-models.

It isn't an exaggeration to say that every disruptive innovation in entertainment technology, particularly television technology, has been resisted by incumbents. The first cable TV systems were decried as piracy by broadcasters²⁰. The humble television remote was the subject of much acrimony when it first appeared²¹. Famously, the world's content giants sought to stamp out the VCR when it first appeared; the MPAA's spokesman, Jack Valenti, testified to the American Congress in 1982 that the VCR was to the American film industry as "the Boston Strangler is to a woman home alone."²² More recently, manufacturers of digital video recorders have found themselves subject to litigation by entertainment companies and broadcasters²³.

Nevertheless, each of these disruptive innovations found its way into the market, and was accommodated by changes in copyright law. The process whereby these innovations went from "pirate" to legit is grounded in the absence of prior restraint.

Innovators have historically been free to enter the marketplace without permission from incumbent broadcasters, rightsholders or manufacturers. Where their products found a receptive market, they were able to use those profits and the public perception of the value of their products to defend their legitimacy in the courts and in the court of public opinion. Copyright's ambiguity -- the wiggle-room that lets an innovator and an incumbent field difficult-to-resolve arguments about a new product's legitimacy -- is a feature, not a bug. It grants the innovator a chance to make his product a success.

By contrast, the DRM regime eliminates this breathing room (during the broadcast flag planning sessions at the Broadcast Protection Discussion Group, Fox executive Andy Setos characterised this as the creation of a "polite marketplace"). Because any innovator who does not have a licence to the descrambling keys is unambiguously in violation of the laws protecting DRM, her product cannot be brought to market, even if it would otherwise be lawful, unless it receives the assent of the change-averse incumbents.

ORG believes that if this prior restraint had been a feature of television since its inception that the platform we now take for granted would not exist, as there would have been no cable TV, no remote controls, no VCRs, and no DVRs.

By allowing the BBC to add a licence requirement to its broadcasts, Ofcom jeopardises all future innovation. This impact cannot be fairly characterised as "negligible." Ofcom recognises the importance of these future copyright rules in the consultation document, at 3.16.1:

19 Ibid

20 *Free Culture*, Lawrence Lessig, Chapter 4, Penguin, 2005

21 *Television's Next Generation: Technology/Interface Culture/Flow*, William Uricchio
<<http://web.mit.edu/uricchio/Public/pdfs/pdfs/flow%20edited.pdf>>

22 <<http://cryptome.org/hrcw-hear.htm>>

23 <<http://www.eff.org/cases/newmark-v-turner>>

"An undertaking to respect current user protections enshrined in copyright law and any future extension of these protections, such as those recommended by the Gower's Review of Intellectual Property."

But there is no mechanism identified in the BBC's proposal to allow for the future evolution of copyright through disruptive innovation.

2.7.2 Devices from elsewhere in the EU will not work in the UK

A fundamental tenet of the common market is the legitimate expectation by consumers that they should be able to use equipment imported from anywhere in the EU. Television receivers are the subject of special attention in the EU, through such regulations as TV Anywhere.

Adding a UK-only restriction requirement violates the principle of a single market. Continental and Irish device-vendors will manufacture TVs, cards and set-top boxes that are DTT ready, but incapable of performing the Huffman decoding step.

2.7.3 Ofcom should not punish early adopters for embracing HD

In the consultation document, at 5.18, Ofcom notes that

"...[A] proportion of early generation HD sets which do not carry the HD Ready logo may not be compatible with HDCP. These sets would be unable to view HD content if HDCP is applied. However, these displays are also be unable to display similar free to air HD services delivered on Freesat, Sky HD and Virgin Media cable which apply HDCP."

That is to say that enthusiastic adopters of HD, who have already been punished for their faith in the technology by all the non-licence-paid HD casters, will now have the last door slammed in their face by the public service broadcaster too.

This is not consistent with the public interest, it is not fair, and Ofcom should not permit it.

2.8 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?

ORG has no opinion on this matter.

2.9: 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?

2.9.1. "Deviceright" is not part of copyright

In this consultation, Ofcom are proposing to extend to the BBC and the anonymous "rightsholders" it cites in its petition an entirely new kind of copyright: the right to control which devices can display a copyrighted work.

This "deviceright" has no point of contact with the underpinnings of copyright law. A company that released an LP could legally enjoin you from copying that phonogram, but they didn't get to tell you what kind of record-player you could put the disc on. The rightsholder for a pre-recorded VHS cassette has many rights in copyright -- to prevent you from copying the tape, to prevent you from playing it for a paying audience -- but there has never been a rule that let the rightsholder design your VCR and require that you omit the features that displeased it.

Ofcom should not add deviceright to the rights under copyright.

2.9.3. Britain's digital future must be tinkerer-friendly

Britain's ongoing competitiveness in the digital future depends on this continuing to be a nation of tinkerers and creators. For decades, British engineers came to the trade by building their own receivers for BBC broadcasts²⁴.

ORG doesn't mean to say that everyone who has the opportunity to open a device will become

24 <<http://www.guardian.co.uk/technology/2007/nov/27/bbc.digitalvideo>>

an engineer. But ORG *does* believe that every engineer starts with a device that she is allowed to open.

The BBC's public service remit means that it should be encouraging a national practice of tinkering and making. Rather than commissioning or buying rights from producers who believe that their content and the platforms that can display it should be off-limits to the licence-paying public, the BBC should be sourcing content that is designed to be remixed, on platforms that are designed to be opened. The BBC should be promoting a nation of technically capable, media-literate digital citizens who make Britain a leader in the information society -- not a nation of passive receivers who are legally enjoined from experimenting with their devices and the content that resides on them.

2.9.4 The BBC is talking to the wrong rightsholders

In the consultation document at 4.10, Ofcom states

Faster broadband connection speeds and the falling cost of digital storage has made it potentially easier to disrupt these HD monetisation windows through the unauthorised distribution of HD content on the internet and physical media. This has led some rights holders to place increasing emphasis on the use of content management technologies to combat the unauthorised distribution of their content after it has been broadcast.

It is true that some rightsholders believe that HD investment can only follow from technology mandates such as the ones proposed by the BBC. But there are other rightsholders, such as Magnolia Pictures, HDNet, Revision 3, and others, all making intense investment in HD programming without any licensor requirement to use DRM.

The BBC produces much of its own content, and surely it isn't arguing that it will refuse to license material to *itself* unless Ofcom grants its request. As to the remaining content, the BBC functions in a buyer's market for content. The world is full of independent production houses that are pounding on the BBC's door, begging the Beeb to buy their HD content. If the BBC's preferred providers won't trade on terms that are consistent with public service, then the BBC should find different providers.