DTG Response to Ofcom Consultation: Second consultation on coexistence of new services in the 800 MHz band with digital terrestrial television

18th April 2012

The Digital TV Group's (DTG) response to this consultation concentrates mainly on technical issues related to coexistence and mitigation, including technical advice for the Supervisory Board.

In making its response, the DTG is keen to assist with making LTE/DTT coexistence as efficient and effective as possible, maximising the benefits of new services to consumers, while protecting viewers and making sure that they have the information and support that they need. The DTG believes that a continuing and healthy DTT platform is good both for viewers and for UK industry.

We have clearly identified where DTG comments are **observations**, and where they are **strong recommendations** based on the DTG's extensive and deep knowledge of the industry and the DTT platform.

Areas where the DTG believes it could contribute to coexistence and mitigation are italicised in the table below.

The DTG's detailed comments and recommendations are as follows:-

Comment refers mainly to Consultation Question	Ref	DTG comment	Supporting evidence for DTG comment
7.1	1	**Observation:** We believe it would be preferable to set up MitCo ahead of the auction so it has good time to prepare	
7.3	2	**Strong recommendations:** The MitCo Supervisory Board will need TV industry/manufacturer representation for the following reasons: A) Manufacturers can help to diagnose problems with receiver equipment and can alert MitCo and other call centres both to calls that manufacturers receive about interference and to known broadcast/receiver issues.	In the wake of reception equipment problems in the early TV switchover at the Selkirk transmitter group, a cross industry "DTT Equipment Issues Steering Group" was set up as a clearing house and coordination body for identifying and resolving issues with

		B) Manufacturers will receive consumer complaints and retailers/manufacturers will experience product returns when consumers experience interference. The Supervisory Board will need access to broad technical expertise, broader than that implied in the consultation document. This would include technical expertise and experience relating to interoperability problems with reception equipment. The Supervisory Board will need full time engineering staff in addition to industry liaison. An advisory technical group is needed that is competent to make a rapid assessment of arising issues and advise the MitCo Supervisory Board. The supervisory board will also need engineering resource to effectively monitor MitCo's response to dealing with technical reception and interference problems. *The DTG believes that it would be well placed to provide industry representation and to coordinate reception equipment aspects of the technical advice needed by the Board. The DTG is at the heart of the industry and in addition to its own expert engineering staff, has access to the industry technical working groups that the DTG hosts. Access to the DTG's DTT receiver collection would assist with the quick identification of issues with particular receivers. And the DTG can use and if necessary modify its own unique software test suites for the testing of reception equipment in the wide range of scenarios*	coverage, reception and receivers. The DTG hosts this, and membership includes: DCMS; Ofcom; Intellect; Digital UK; Freeview; Digital Multiplex Operators Ltd (DMOL); and the DTG. This group might provide a basis for a similar group to respond to arising coexistence issues and to advise the MitCo Supervisory board. One of the issues considered by the DTT Equipment Issues Steering Group during switchover was poor TV coverage in part of north Devon. The problem proved impossible to understand fully without making reception measurement in the area affected. We believe that arrangements will be needed by MitCo for site surveys of localities where unexplained reception problems occur.
7.5	3	**Strong recommendations:** It is not clear that adequate account has been taken of two aspects of mitigation using filters: 1) Filter insertion loss may have an impact that is bigger than expected. Ofcom's research on household aerials[1] shows that households tend	

[1] http://stakeholders.ofcom.org.uk/binaries/research/tv-research/aerials_research.pdf

		to have TV aerials that are just good enough (as opposed to the standard performance assumed in planning calculations), so even a small insertion loss for filters will lead to a need to upgrade larger numbers of household aerials than would be predicted using the standard antenna assumption 2) To be effective, filters added to domestic aerial systems must be inserted on the antenna side of the amplifier. For mast head amplifiers this will mean at the aerial. For roof space mounted amplifiers, the filter will need to be in the roof space. Even where the amplifier is in the same room as the TV, the scope for incorrect installation by consumers is increased when an amplifier is present. During switchover a "digital tick" logo (licensed by Government) and associated certification scheme was available to help guide consumers to reliable aerial and distribution equipment installers. We understand that this logo scheme will end with switchover. LTE switch on and the associated interference it will produce will mean that installers will need new information and training, and consumers will need to be able to identify suitably qualified installers. *The DTG publishes the DTG R-Book that provides advice and specifications for aerial installations and reception systems. The DTG could offer to assist with upgrading the R Book to include information relevant to installers and reception equipment manufacturers about LTE coexistence*	
7.6	4	**Strong recommendations:** In the MitCo scenarios described by Ofcom, over-reliance is placed on consumer feedback and complaints. In practice consumers tend not to complain or even enquire. Instead of solely relying on consumer feedback, some pro-active monitoring of interference is needed, possibly linked with consumer research. Ideally this should be done in the early phases of rollout, so learnings from early rollout can be incorporated into later practice and future monitoring needs identified.	

		A fuller programme of DTT receiver performance testing is needed so that MitCo will have accurate information to make a judgement as to whether a receiver upgrade might solve a reception problem. The UK Knowledge Transfer Network (KTN) has submitted a proposal to DCMS to set up an innovation test bed for sub 1GHz coexistence. This is proposed to be situated at the DTG's laboratories, making use of the unique facility of a GTEM RF cell coupled with the comprehensive UK DTT receiver collection. This will enable testing of new technologies in different configurations and varying parameters in a controlled environment, while gaining an understanding the impact on the deployed base of TV receivers. The DTG believes that it will not be possible in all cases for MitCo call centre staff, even with technical back up, to make accurate decisions on need for additional mitigation or platform change. In some cases on-the-ground measurements will also be needed. This is because in some cases actual field strengths of signals, both DTT and LTE will differ considerably from predictions. A clear process is needed for determining if interference is present in a location and doing this and resolving issues quickly is important. This should include access to on site monitoring where the issue cannot be resolved remotely. *In the early stages of switchover, a hand held aerial checker was developed jointly by broadcasters, Digital UK and Ofcom to allow householders to test their own reception. While it was decided not to roll out that product beyond the prototype stage for switchover, in the case of LTE coexistence an in home measuring or logging device may be a useful tool in gathering data on signal levels and for identifying mitigation needs. The DTG would be willing to help with the specification and development of such equipment.*	
7.9	5	**Strong recommendation:** Arrangements for quality assurance of filters will	

		be needed. This should include independent testing of batch samples. Test specifications should include insertion loss and mechanical quality. *The DTG would be willing to discuss offering assistance to the programme in the area of filter conformance testing and certification.*	
	6	**Observation:** A number of DTG members have observed that the Government's decision not to assist homes that will may be badly affected because they currently rely on indoor aerials and especially set top aerials (believed to be around 4% of TV homes for first sets and around 30% for secondary sets) may cause both consumer harm and damage to the DTT platform. A larger number of viewers use loft mounted aerials which are also likely to be worse affected. Similar concerns have been expressed about the decisions not to provide assistance for second sets, and for installation assistance where filters may be needed in inaccessible locations such as for mast-head and loft mounted amplifiers.	
	7	**Observation:** relating to consultation paragraph 7.168. DTT coverage calculations make allowance for weather conditions so "weather related" effects should not generally cause loss of reception. When measurements or calculations are made in relation to acceptable interference, the 99% coverage criterion should be used to ensure that households do not suffer worse "weather related" interference than before the LTE service started.	

Summary of DTG responses:

Ref	Summary	Strong Recommendation / Observation, etc.
1	• Preferable to set up MitCo ahead of the auction	Observation
2	• MitCo Supervisory Board will need TV industry/manufacturer representation • Supervisory Board will need access to broad technical expertise, including an advisory technical group	Strong recommendation
3	• Filter insertion loss, and the impact of the real (rather than theoretical) population of household TV aerials should be taken into account when designing and calculating mitigations	Strong recommendation
4	• Any reliance on consumer feedback for performance monitoring should be backed up by research and measurements • A programme of DTT receiver performance testing is needed • On site measurements of interference should be allowed for in cases where reported interference is at odds with predictions	Strong recommendation
5	• Arrangements for quality assurance of filters will be needed	Strong recommendation
6	• Comment on the potential consumer harm associated with not supporting indoor aerials; second and third TV sets; and not providing installation support where installation is not straight forward	Observation
7	• Mitigation should ensure that households do not suffer worse "weather related" interference than before the LTE service started	Observation

Annex - About the Digital TV Group and the D-Book

The DTG enables the development of reliable and fully compliant digital TV and media products and services for the UK market. The Group's standards incorporate commercial and business requirements and ensure a high quality in-home consumer experience. It is achieved by:

1. Publishing an interoperability specification agreed by the industry, based wherever possible on international standards with UK specific elements only where essential (such elements are fed back to international standardisation processes)

2. Providing a single test regime accepted by the industry to confirm that products conform to the specification

3. Providing a testing service acceptable to service providers to confirm that products conform to the specification and to confirm minimum performance of their services

4. Operating the above under a trademark licence-based conformance regime

This document has been written using feedback from the DTG's membership but does not necessarily represent the views of all DTG members organisations.

The D-Book is the technical specification for UK digital terrestrial television (Freeview and Freeview HD).

The DTG has published and maintained the D-Book for over a decade and the specification is updated annually to keep up with the pace of development in UK DTT.

The D-Book is compiled by DTG working groups comprised of the DTG's membership and staff who continually update and peer-review the specification.

The DTG's test centre: DTG Testing tests digital TV products applying for the Digital Switchover Certification Mark (the 'digital tick'), Freeview, Freeview + and Freeview HD logos against the D-Book standard. Any manufacturer wishing to use the Freeview HD logo on a product must pass the required DTG Testing Freeview HD tests.

The first edition of the D-Book was written in 1996 when the current UK standard for terrestrial broadcasting (DVB-T) was new and untried. Early editions of the D-Book enabled the publication of the European digital TV specification: the E-Book.

In March 2009, the DTG published the 6th edition of the D-Book—enabling the launch of an initial three free-to-air HD channels on Freeview by late 2009, as well as the introduction of a broadband return path which has the potential to be used for streaming on-demand video content such as BBC iPlayer, ITV Player and 4oD, accessing e-government services and allowing viewers to complete transactions via their television. It also introduced DVB-T2, the new modulation scheme that is being used in the UK to deliver these services.

In March 2011 the DTG published D-Book 7, the detailed interoperability specification for digital terrestrial television with extended Connected TV functionality. Connected TV is the convergence of 'traditional' broadcast digital television and the Internet to deliver new services, applications and programming (both linear and on-demand). D-Book 7 provides an industry-agreed baseline specification for Connected TV products and services that Sky, Virgin Media, YouView and others can build on for trademark requirements to support their services.

Since the DTG was established over a decade ago, the Group has worked closely with our members to adapt international standards such as DVB-T and DVB-T2 to create an interoperable UK digital TV platform that consumers can rely on.

The DTG currently has liaisons with international standardisation bodies including DECE (Ultraviolet), ETSI, HbbTV, and the Open IPTV Forum (OIPF). The DTG has incorporated parts of these standards into D-Book 7 and adapted them to make them work for the UK market. Extensions have now been fed back to the standardisation bodies to enable the next generation of standards across Europe.

The DTG continues to allow Digital Europe to use areas of D-Book copyright under licence to encourage international harmonisation.

The D-Book is available to members of the Digital TV Group. Membership is offered for an annual fee on a non-discriminatory basis.

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----------End of response----------

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