

Future use of the 700 MHz band: Implementing Ofcom's UHF Strategy

The Digital TV Group (DTG) welcomes the opportunity to respond to the above consultation regarding the future use of the 700 MHz (694 – 790 MHz) band.

The DTG commend Ofcom's proactive engagement with the international process for harmonised release of the 700 MHz band whilst seeking to ensure that the digital terrestrial television (DTT) platform can access the 600 MHz band (550-606 MHz).

During the analogue to digital switchover process (2009-2012) the DTG were responsible for testing equipment designed to work through switchover by ensuring that it met strict quality and standard requirements.

If, as anticipated, the co-primary use of the 700 MHz band is confirmed at WRC-15 then the DTG is well placed to assist with any transition of DTT from 700 to 600 MHz and/or any interference management between DTT and mobile broadband (MBB) in 700 MHz, whether it is exclusive or co-primary.

The DTG recognises that the future of 700 MHz is by no means conclusive at this stage and dependent upon decisions being made at an international, European and UK level. The DTG would like to note that the use of 700 MHz is not a simple dichotomy between broadcasting and mobile broadband but could include complimentary use of TVWS and licence-exempt spectrum.

Equally our response focuses largely on a potential transition to DVB-T2, which does not endorse a belief that it is, or should be, inevitable but nonetheless we recognise that it is a very real possibility.

Question 1: Have we correctly identified and characterised the potential costs set out above, and what other costs – if any – should be taken into account in our assessment?

DTT will potentially be losing 96 MHz of spectrum (see Section 4.5) or 37.5 per cent of its current allocation. This should not translate to a corresponding reduction in its services by 37.5 per cent; or indeed, any reduction in services. Sufficient spectrum needs to remain and be able to accommodate six multiplexes providing the same levels of coverage that consumers receive and expect today.

Ofcom should work with industry through the DTG to develop and deliver innovative new broadcast and compression technologies. This should ensure as a minimum, that the existing services will continue, whilst making more efficient use of what's available.

Regarding cost, the DTG carried out £1.44m of work for the recent Digital Switchover (DSO) to test equipment designed to work after switchover. This is only a fraction of the overall £603m of funding from the BBC. The potential cost of a transition to DVB-T2 could be significantly lower if the right incentives were prepared to influence purchasing decisions and/or speed up replacement cycles. For example, the proposal to establish temporary DVB-T2 multiplexes in the 600 MHz.

Ofcom research from October 2012¹ indicates that 41 per cent of the UK homes are already capable of receiving DVB-T2 (HD) transmissions and the estimate at 5.20 argues that 80 per cent of primary sets will be DVB-T2/MPEG-4 by 2018.

This does not include any estimate of secondary sets capable of receiving DVB-T2; by virtue of them often being smaller, cheaper and 'less of a priority', the numbers of secondary (or more) sets, that are DVB-T only will be

¹ "Take up of High Definition TV Services". October 2012. <http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr12/international/icmr-3.08> [accessed 20-Jun-2013]

greater. This presents an obvious potential for both inconvenience and cost to consumers through upgrading existing equipment and/or subscriptions to include every television set in the house.

Finally, the DTG notes that any clearance of Digital Terrestrial Television (DTT) from 700 MHz – with a transition to DVB-T2 or not – would be an expensive and risky process; one that requires extensive planning, management, time and resources. For example, one lesson from DSO was that radio listeners and broadcasters were also impacted by the move.

Question 3: Have we correctly identified and characterised the potential benefits set out above, and what other benefits – if any – should be taken into account in our assessment?

The DTG broadly agrees with the potential benefits but feels that it is necessary to stress these are intrinsically uncertain and hard to calculate.

Furthermore, the benefits outlined in your consultation document are entirely related to mobile broadband with no mention of how it may also, if managed properly, be an opportunity for DTT. A transition to the more efficient DVB-T2 standard could prove to be as much as 50 per cent more efficient.² This would in fact increase the potential range of HD services for DTT, despite the 37.5 reduction in capacity (predicted in 4.5) through reducing the bandwidth costs for broadcasters as well as freeing up additional capacity for new channels and services.

This would both offer increased benefits to consumers (as suggested at 4.36) and promote the longevity of free-to-air digital terrestrial television as a whole.

DVB-T2 has the added bonus that 'T2-Lite' can be transmitted simultaneously using the same RF channel to deliver content to mobile and portable devices e.g. in-car, laptops, smart phones - at the same time as roof top and set top antennas (albeit with a noticeable reduction of capacity for the main part of the multiplex); reducing the burden on MBB for delivery of AV content.

Question 5: In particular, what is your view of the likely future demand for additional sub-1 GHz spectrum for the provision of mobile data services, and what evidence supports this view?

Estimates of the increase in usage of MBB from 2012–2030 vary greatly from 20/80 to 300 times greater³, undermining the case for its exponential expansion. There is no doubt that it will increase however and some sensible estimates will need to be made. As video-to-mobile becomes more popular, to avoid a capacity crunch or any conflict between MBB and DTT it may be prudent to look at ways of delivering both over the same frequency i.e. DTT to mobile devices, such as DVB-T2 Lite - if such solutions are technically and commercially feasible.

Other demands on the sub 1 GHz spectrum could include Wi-Fi as 2.4 GHz and 5 GHz are expected to reach capacity over the next two years.

Question 6: Should we place different weights on some costs and benefits than on others, for example depending on whether costs would be borne by consumers, DTT operators, or mobile operators?

The DTG believes that in the event of a clearance in 700 MHz the beneficiary (mobile operator or otherwise) should bear all of the costs and not the consumers, DTT operators or broadcasters.

² "2nd Generation Terrestrial". May 2013. http://www.dvb.org/technology/fact_sheets/DVB-T2_Factsheet.pdf [accessed 20-Jun-2013]

³ Ofcom "Securing long term benefits from scarce spectrum resources". March 2012. <http://stakeholders.ofcom.org.uk/binaries/consultations/uhf-strategy/summary/spectrum-condoc.pdf> [accessed 01-07-2013]

Question 8: Have we correctly identified the costs and benefits that could vary depending on the timing of release, and the impact of those factors? Are there other costs and benefits which would vary depending on the timing of release of the 700 MHz band which we should take into account?

The timing should be conditional upon MBB reaching a certain capacity before moving DTT to 600 MHz. The DTG endorses your conclusion at 4.35 that states the "associated cost and disruption may be greater with an earlier release."

Question 21: Do you have any comments on the pre-emptive measures relevant to DTT identified above? Are there other pre-emptive measures we should be considering?

The DTG hosts the UK's largest Gigahertz Transverse Electromagnetic (GTEM) Cell – currently used for conformance testing of digital radios and 4G/LTE testing. This permits the testing of small to medium devices up to the 20 GHz frequency; which can be used to assist Ofcom in testing mobile devices against DTT receivers/aerials with a view to better mitigation and design.

Question 22: Have we identified the correct measures to support consumer adoption of DVB-T2?

Phase out sale of DVB-T at earliest opportunity, to minimise the legacy cost of a migration to DVB-T2. In addition, a coherent and consistent consumer proposition relating to an obvious and attractive benefit would undoubtedly help drive technological change.

About the Digital TV Group (DTG)

The Digital TV Group (DTG) is the focal point of the UK's digital TV industry. The Group, a not-for-profit membership organisation, brings the industry together to enable the successful delivery and evolution of digital TV and associated technologies.

The DTG publishes and maintains the technical specification for the UK's Freeview and Freeview HD platforms and Connected TV (the D-Book) and runs the digital television industry's test centre: DTG Testing.

To encourage international harmonisation, the DTG is engaged with DECE (Ultraviolet), ETSI, HbbTV and the Open IPTV Forum. The DTG allows Digital Europe to use areas of its copyright under licence.

DTG Testing tests digital TV products applying for the Freeview, Freeview+ and Freeview HD logos against the D-Book standard.

DTG Testing also manages the Engineering Channel for continuous maintenance of the UK's Freeview and Freesat platforms, and maintains a receiver collection for testing new transmission modes and software downloads.

The DTG and DTG Testing supports the development and deployment of next generation technologies such as LTE (4G), TV white spaces, second screen and home networking.

- www.dtg.org.uk
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