



Response to consultation:

Lamy Report: the future use of the UHF TV broadcasting band

12 April 2015

This response is submitted by Digital UK on behalf of its Members – the BBC, ITV, Arqiva and Channel 4 - the holders of the UK terrestrial Broadcasting Act and Wireless Telegraphy Act licences.

1. Respondents' profile

I am responding as:

- An individual in my personal capacity*
- The representative of an organisation/company.*

Please enter your full name: Liz Reynolds

Please enter your organisation /company name: Digital UK

Please explain who the organisation represents and, where applicable, how the views of members were assembled.

Digital UK represents the holders of the UK terrestrial Broadcasting Act and Wireless Telegraphy Act licences - the BBC, ITV, Arqiva and Channel 4. This response has been written with input from each organisation.

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2 Confidentiality

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- Please consider my contribution as confidential*

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About Digital Terrestrial Television (DTT)

Digital Terrestrial Television (DTT) is Europe's most popular TV platform. In the UK, DTT provides a universally available service offering a range of more than a hundred free-to-air TV, radio and text-based services. At the heart of DTT in the UK is Freeview, which is used in around three quarters of homes.

Prior to digital switchover (DSO), more than four million UK households could not access DTT services and elsewhere signal strength was variable. Thanks to industry investment in excess of a billion pounds, switchover made DTT available to 98.5 per cent of homes.

About Digital UK

Digital UK supports the UK's terrestrial TV service and its viewers.

We are responsible for day-to-day operational management, including the Freeview electronic programme guide, and lead on developing platform strategy, working with our broadcast partners and industry. We also provide viewers with information and advice about terrestrial TV channels, services and reception.

Digital UK is owned by the BBC, ITV, Channel 4 and Arqiva

1. Executive Summary

The views in this submission reflect the UK's role as a leading EU market in the development of both broadband services and terrestrial television, which is used in three-quarters of homes. As the European Commission develops its spectrum policy for the next decade, we highlight the risks associated with major changes to Europe's most widely used television platform but also the opportunities to create a stable environment in which both these vital technologies have the airwaves they need to meet continuing consumer demand.

We would like to thank the organisations which supported the High Level Group process and Pascal Lamy for producing a constructive and considered report, offering the prospect of a 'win-win' for broadcasters and broadband providers.

Central to the Lamy Report's findings is the acknowledgement that DTT is the 'backbone of the European audiovisual model' and will remain so 'for the foreseeable future'. This is the context for the challenges faced by broadcasters and multiplex operators in preparing for 700MHz clearance, including a 30 per cent reduction in the spectrum reserved for television across the EU.

We also highlight the wider concern of ongoing commercial uncertainty caused by the seemingly open-ended policy debate around spectrum re-allocation. As the Lamy Report makes clear, there is a need to provide broadcasting with a stable climate in which to invest as DTT adapts to the connected age.

Our response seeks to balance these concerns with support for measures to ensure the health of DTT over the next decade and beyond. These include:

- A central role for the EU in co-ordinating a successful clearance of the 700MHz band, including clarity on how states may compensate broadcasters and viewers
- Support for a flexible deadline of 2020 +/- two years as set out in the Lamy Report, while acknowledging that even this will be challenging for some states
- Wider adoption of spectrum efficient technologies in the next stage of DTT's evolution which may also mitigate coverage issues caused by 700MHz clearance
- Safeguards in spectrum policy to provide reasonable certainty for DTT as it adapts to a hybrid world in which broadcast television is complemented by on-demand and streamed services

We recognise the changing landscape, the pressures on spectrum and that broadcasting policy cannot be set in stone. We do believe, however, that a state of permanent change and uncertainty for television operators and viewers does not serve the public interest.

We therefore agree with the Lamy Report view that broadcasters require reasonable certainty concerning access to spectrum below 700MHz and that 2025 would be an appropriate deadline for any further review of how UHF spectrum is used.

2. Potential repurposing of the 694-790 ('700') MHz band

2.1 The benefits and challenges of clearance

We recognise the importance of securing sufficient capacity to support the expansion in consumer demand for mobile broadband services. The release of a substantial quantity of UHF spectrum (the 800MHz band) through the European digital switchover process and now the proposed clearance of television services from the 700MHz, is helping meet demand for mobile broadband services over the next decade and beyond.

The clearance of the 700MHz band does, however, pose considerable challenges for European broadcasters who make extensive use of these frequencies for terrestrial broadcasting. Digital Terrestrial Television (DTT) remains the principal means of watching television across the EU and is the primary source of television in 40 per cent of homes. It also plays a vital role in ensuring competition for pay platforms and is the mainstay of public service broadcasting in many states. A key premise for the Lamy Report's recommendations is that DTT is the 'backbone of the European audiovisual model' and will continue to play an essential role 'for the foreseeable future'.

Key challenges for broadcaster and multiplex operators in preparing for 700MHz clearance include developing a new band plan for Europe, accommodating a 30 per cent reduction in spectrum and re-engineering DTT networks to operate on alternative frequencies. Viewers will face the inconvenience of retuning DTT equipment (both televisions and recorders) coupled with the risk for some that a new aerial will be required in order to continuing to receive a DTT service. In the UK, up to 100,000 households currently using a grouped aerial may need to switch to a wideband replacement ahead of any clearance taking place. In some areas, there is also the risk of less reliable coverage as a result of clearance.

Of greater concern is the risk to the future of DTT created by a spectrum policy debate that fosters ongoing and unreasonable uncertainty for platform operators and the wider market. In this climate, clearance of the 700MHz band may be seen as simply a staging post towards making all UHF spectrum available for mobile broadband. As the Lamy Report highlights, there is a clear need to provide certainty 'for the next investment cycle' which will see DTT evolve to meet the needs of viewers in terms of greater levels of connected viewing and improved picture quality.

To this end, European policy relating to clearance of 700MHz must facilitate a process which allows mobile broadband to co-exist alongside DTT and PMSE services in the adjacent frequencies for the long term. It must do this while also enabling a clearance programme which is properly costed, funded and managed to protect the integrity of DTT.

In order to secure the benefits of new mobile data services, European UHF policy governing the clearance of this band must ensure the following:

- DTT viewers do not bear the costs that would result from any clearance process
- The multiplex operators who are the existing authorised users of the 700MHz band should be left no worse off than if they retained access to the band
- Viewers are fully supported through the transition, any impact is minimised and existing DTT coverage and capacity nationally, regionally and locally is maintained
- DTT is assured of continued access to the 470-694MHz band for the long term

2.2 EU co-ordination and guidance on state aid

We see benefits to an EU co-ordinated approach to any displacement of broadcasting service from the 700MHz band in favour of wireless broadband. Such an approach would minimise disruption to DTT broadcasting in member states, support international co-ordination and ensure the widespread availability of released spectrum.

Clarity on funding for change on this scale and complexity will be vital to realising these benefits. As acknowledged by the Lamy Report: ‘Member States should ensure that broadcasters and PMSE users are left no worse or no better off than they would have been without any clearance of the 700MHz band. Clearing the 700MHz band would be likely to involve significant disruption and cost to the broadcast industry, PMSE and citizens.’

We agree with this important principle and with the Report’s practical proposal that the Commission provides ‘guidance to Member States clarifying how national measures with the aim of supporting transition would be compatible with state aid rules’. Our clear view is that proportionate compensation – which would leave DTT multiplex operators no better or worse off as a result of 700 MHz clearance – should not be considered state aid under the EC rules.

We believe achieving clarity and certainty on the sources and level of proportionate compensation will assist all parties in achieving a smooth, well planned and cost efficient transition. Any 700MHz clearance process must respect the legal rights of the DTT multiplex operators who are the licensed users of the 700MHz spectrum band. They will not benefit commercially from clearance and therefore should not incur any of the costs that will result from the process. It is the licensees’ substantive and legitimate expectations, including unencumbered use of their allocated spectrum, free from any interference, which have underpinned their very significant long-term investments in DTT infrastructure.

We suggest that any funding of change of spectrum use should come from eventual beneficiaries (future mobile 700MHz licensees) or from the expected benefits that will accrue to member state economies. We would oppose any use of TV licence fees to fund clearance of the 700MHz band as this would have a significant impact on production and delivery of UK content and services to viewers, as well as destabilising the DTT platform.

2.3 A deadline for 700MHz clearance

In terms of timing for 700MHz clearance, the Lamy Report acknowledges the diverse DTT market in the EU with differing levels of usage and technical complexity. This underpins the report’s proposed deadline of 2020 while allowing two years either way for countries which may wish to go earlier or later.

It is also worth noting, however, that cross-border frequency co-ordination may take longer in some cases than the three years estimated in the recent RSPG consultation on long-term UHF strategy¹. This estimate appears to be based on the planning process for 800MHz clearance which did not feature some of the complexities of re-planning the 700MHz band.

We would ask the Commission to note that of the six member states which responded to the recent RSPG consultation, five said that 700MHz can only be made available for WBB *after* 2022 largely due to the current usage of the band and cross border coordination issues.

¹ RSPG Opinion on the Future Use of the UHF Band, February 2015
<http://rspg-spectrum.eu/2015/02/36th-rspg-meeting-19-february-2015/>

We would therefore urge the Commission to acknowledge that for other member states facing more complex co-ordination issues, flexibility will be vital. While some European states are intending to clear 700MHz in advance of this timing, for others even 2022 may prove challenging. There cannot be greater certainty until the international frequency planning process has been completed, the extent of changes needed to the current DTT infrastructure is known and the funding arrangements have been agreed.

2.4 Mandating spectrum-efficient technologies for DTT equipment

European states, including the UK, are seeing steady growth in the take up of spectrum efficient technology both as a transmission standard and in consumer equipment.

As a transmission standard, DVB-T2 is already widely used across Europe. A study by Analysis Mason has shown² that while most European countries completed their digital switchover (DSO) with DVB-T, many are now increasing their use of DVB-T2.

In the UK, the first DVB-T2 service was launched in the UK in 2009 and there are now three such multiplexes on air in the UK with a fourth likely to launch in 2015. A number of other European states have also adopted DVB-T2 as a transmission standard with some, including Germany, Austria and the Czech Republic, planning a full transition.

At this stage in the development of DTT, we do not see a benefit in mandating DVB-T2 as a transmission technology. With further progress in this area likely to be consumer driven, we see it as more beneficial to focus on promoting the adoption of consumer equipment incorporating this more efficient standard.

In the UK, a number of broadcaster-led developments are helping drive demand for DVB-T2 televisions which now account for around 60 per cent of UK total sales. A steadily expanding range of HD channels has helped stimulate much of this growth. Freeview now offers more than 10 subscription-free HD services, encompassing entertainment, news and film channels.

Digital UK and Freeview are also developing a converged hybrid offering - Freeview Play - which will enable viewers to move seamlessly between live content and catch-up services such as BBC iPlayer. The technical specification for Freeview Play products will be based on DVB-T2 and with the option for HEVC. We and our partners are also exploring a range of further measures to drive the adoption of DVB-T2 by both manufacturers and consumers.

While we and our members will continue to encourage adoption of reception equipment based on DVB-T2, we would welcome policy support for additional measures to accelerate take up which would deliver significant benefits in terms of spectrum efficiency and channel choice.

3. Ensuring regulatory certainty for current users of spectrum

3.1 Safeguarding primary use of the 470-694 MHz band for DTT

We agree with the Lamy Report recommendation that the 470-694MHz band should be safeguarded for broadcast use until at least 2030. We would also emphasise that there is

² Roadmap for the evolution of DTT, 2015

http://www.digitag.org/wp-content/uploads/2015/01/0694-Roadmap-Report_web-2.pdf

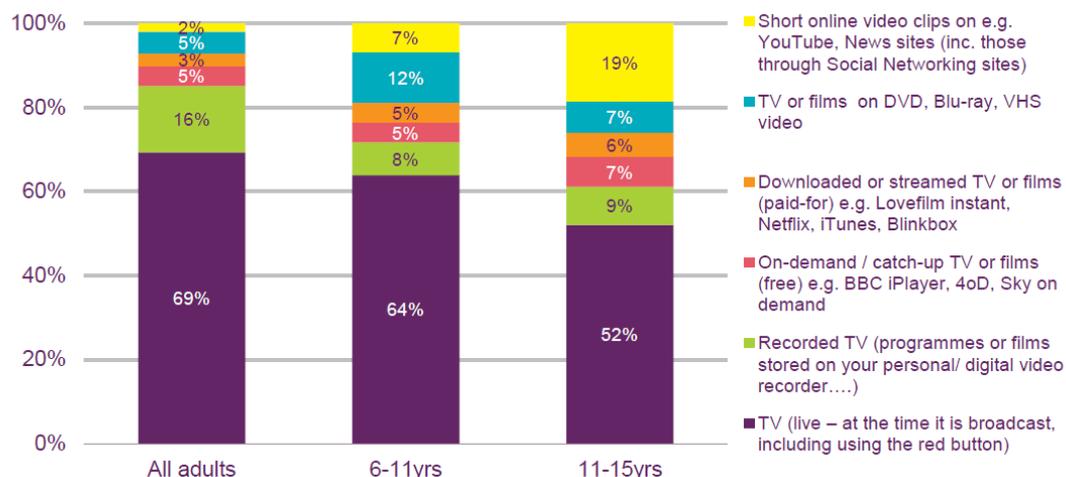
strong evidence to suggest that broadcast platforms like DTT will remain an important and popular way to watch TV well beyond this date.

There is undoubtedly a marked increase in demand for watching video on mobile devices and through internet-enabled televisions. However this type of viewing still only makes up a small proportion of overall viewing – the vast majority of which remains to live, linear output on the main TV in the home. Recent analysis by Thinkbox³ in the UK found that televisions continue to be the screen of choice by some distance. In 2014, 98.4 per cent of all TV was watched on a TV set, the vast majority of which (86 per cent) was on a TV set in the living room. The same report showed that, despite claims from some quarters of a revolution in viewing habits, TV set viewing was only 0.4 per cent less in 2014 than it was 10 years ago.

The High Level Group also concluded that linear viewing over different platforms on large TV screens is likely to remain the preferred way for consumers to watch audio-visual content for the foreseeable future. As the Lamy Report accompanying factsheet⁴ illustrated, recorded and on demand viewing is increasing but still accounts for only around 10 per cent of the total.

There are of course differences between age groups, with younger viewers often more inclined to watch on-demand services and use portable devices. However, recently published analysis by UK media regulator Ofcom showed that live or recorded television remains by far the most popular way to watch across all age groups - see Figure 1, below⁵. Even among those with the highest propensity to watch internet-based services (11-15-year-olds), the amount of live or recorded TV viewing was 61 per cent of the total, compared to 13 per cent for on-demand or streamed.

Figure 1 – Ofcom research: Proportion of watching activities – all adults v children



Source: Digital Day 7-day diary for adults/ 3-day diary for children
 Base: All watching activity records for adults 16+ (25272), primary school-aged 6-11 (1249), secondary school-aged 11-15 (1094)

³ Thinkbox viewing figures for 2014

<http://www.thinkbox.tv/viewing-figures-for-2014-show-changing-tv-landscape>

⁴ Lamy Report Annex 3 – Fact Sheet, On Demand

⁵ Ofcom Digital Day research, November 2014

<http://stakeholders.ofcom.org.uk/binaries/research/cross-media/2014/children-digital-day.pdf>

Significant questions also remain over the resilience of broadband infrastructure and its ability to ensure a reliable high-quality viewing experience. Ofcom's paper on the Future of Free to View TV published in 2014⁶ set out the significant challenges which will need to be overcome in order for IP networks to be capable of offering consumers a viewing experience comparable with DTT networks. These include ensuring the universal availability of superfast broadband and high levels of consumer take up. Ofcom estimates that a quarter of UK households will still not have superfast broadband by the mid-2020s.

Ofcom has highlighted high-profile IP failures⁷ as evidence of how such networks tend to succumb to technical problems during periods of high demand. By contrast, demand for viewing does not affect the resilience or performance of broadcast networks.

4. Flexibility of use of sub-700 MHz (470-694 MHz) spectrum

We agree that new approaches will become increasingly important in achieving the most efficient use of spectrum.

In the UK, Digital UK and its members have supported the principle of extending spectrum sharing to allow for the development of white space devices (WSDs) provided there is no interference to DTT services. This builds on the principle which has underpinned the long-standing and successful coexistence arrangement between DTT and PMSE.

The Lamy Report recommends studying how the principle of spectrum sharing could be extended further to accommodate WBB downlinks. While this 'flexibility option' is still not fully understood it is difficult to comment on either its desirability or practicality. We would therefore support studies to help more fully understand what 'flexibility' would involve. This would require assurances that the risk of interference to DTT can be managed both within a country and across borders.

In terms of policy changes to accommodate such developments, we would highlight that safeguards already exist in the ITU Radio Regulations and the GE06 Agreement, which is acknowledged in ECC Report 224⁸.

We would also emphasise the inherent incompatibility issues of parallel or hybrid networks which were highlighted both in the ECC report referenced above and an extensive study for the European Commission by Plum and Farncombe⁹. We consider it of critical importance that any new approaches to spectrum use do not inhibit the existing capacity or coverage of DTT networks and allow for the future evolution of the platform.

⁶ The Future of Free to View TV – May 2014

http://stakeholders.ofcom.org.uk/consultations/700MHz/ftv/?utm_source=updates&utm_medium=email&utm_campaign=ftv

⁷ The Future of Free to View TV, Ofcom, 2014 – cites IP failures linked to high volumes of demand - Sky's Now TV on last day of the 2014/14 football Premier League and HBO Go crashing at launch of a new Game of Thrones season.

⁸ Long term vision for the UHF broadcasting band, November 2014

<http://www.erodocdb.dk/Docs/doc98/official/pdf/ECCREP224.PDF>

⁹ Challenges and opportunities of broadcast-broadband convergence and its impact on spectrum and network use, 2014

http://www.plumconsulting.co.uk/pdfs/Plum_Dec2014_Broadcast-broadband_convergence_and_impact_on_spectrum_and_network_use.pdf

5. The EU position for WRC-15

We consider it vital that there is a common European position on key spectrum decisions at WRC-15. In particular, the EU should oppose a co-primary allocation for the 470-694MHz band and ensure harmonised terms for the clearance of the 700MHz band.

As the Lamy Report makes clear, the UHF band will remain of critical importance for the foreseeable future and a common EU position will increase the likelihood that the ITU Radio Regulations continue to reflect what is in the interests of European citizens.

A recent report published by Aetha¹⁰ on the future use of the 470–694MHz band highlighted the economic benefits which would derive from maintaining this band for primary use by broadcasting. It concluded that there was no economic case in the period 2015-2029 for switching-off existing DTT networks across Europe on the grounds of spectral efficiency. The study found that even when using the most aggressive mobile traffic forecast, the costs of clearing DTT from the spectrum outweighed the potential value of using it for mobile by a factor of four to one.

We would also point to the findings of Communications Chambers in its 2014 report exploring the value returned by DTT from its use of spectrum¹¹. While the report focused on the UK market, it is reasonable to assume that many of its findings would be applicable to other EU member states where DTT services are widely used. The report highlighted DTT's role in driving competition and that it delivered a far higher economic surplus than mobile per MHz of spectrum.

In developing future policy, we would urge the Commission and others to be cautious in basing spectrum policy on long term forecasts for mobile data demand which are inherently uncertain. Cisco has twice reduced its data traffic forecasts in recent years and even these revised estimates are still seen by some as significantly overstating the likely level of future data demand.

Analysis by LS Telcom¹² showed that the traffic density forecasts used in ITU modelling to determine future spectrum requirements for mobile broadband were 'orders of magnitude too high' while research by University of California and Goldin Associates¹³ has highlighted the persistent tendency of spectrum forecasts to overestimate future demand.

This inherent uncertainty in mobile data forecasting is in marked contrast to the clear evidence of the growing importance of Wi-Fi in meeting the growing demand for data on mobile devices, both at home and on the move. Most video content is consumed in the home and Wi-Fi is increasingly ubiquitous in towns, cities and on public transport networks. These trends,

¹⁰ Future use of the 470-694MHz band, Nov 2014

https://tech.ebu.ch/docs/news/2014_11/Aetha%20Future%20use%20of%20the%20470-694MHz%20band%20in%20the%20EU%2031%20Oct%202014.pdf

¹¹ The Value of Digital Terrestrial Television in an era of increasing demand for spectrum, January 2014

¹² Mobile spectrum requirement estimates, getting the inputs right: [http://satellite-spectrum-initiative.com/files/Mobile%20Spectrum%20Forecast%20final%20report%20v106\[1\].pdf](http://satellite-spectrum-initiative.com/files/Mobile%20Spectrum%20Forecast%20final%20report%20v106[1].pdf)

¹³ Overestimating wireless demand: policy and investment implications of upward bias in mobile data forecast, August 2014 http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2418364

towards traffic offload on to Wi-Fi¹⁴ illustrated by a 2013 EU report inevitably raise questions regarding the need for additional sub-1GHz spectrum for mobile networks.

We would also highlight that the increased use of small cells and mobile network densification to increase data capacity is better addressed by access to higher frequency spectrum, regardless of whether the user equipment is static or mobile.

6. The EU position on 470-694 MHz band for WRCs beyond 2015

Now that numerous studies have demonstrated DTT's important and enduring role in Europe's audio-visual model, platform operators require reasonable certainty to make long-term investment decisions. The delivery of enhanced picture quality via HD services and greater integration of catch up TV to create hybrid platforms will rely on a stable policy and regulatory environment.

Continuing an open-ended debate concerning the future of the UHF band will inevitably hamper such developments. We agree with the Lamy Report recommendation that following years of debate and uncertainty, there now needs to be a 'consistent EU position at future WRCs (starting from WRC-15) against co-primary allocation of spectrum below the 700MHz band'.

We would note in particular the Lamy Report's reference to safeguarding this spectrum for broadcasting, '*starting* from WRC-15'. If DTT is indeed to remain important until at least 2030, it would be appropriate for the EU to adopt this position at WRCs prior to 2025.

7. Flexible downlink-only use in the 470-694 MHz band

As set out above, safeguards for DTT already exist in the ITU Radio Regulations and the GE06 Agreement. As ECC report 224 noted: 'A key feature of GE06 is that it allows for flexible implementation, facilitating other services, besides broadcasting, in the band on condition that the spectral power density of an alternative use does not exceed the associated plan entry and requires no more protection than the associated plan entry.'

While further study of downlinks is required, the fundamental principle that downlinks must be compatible with the broadcasting needs in the relevant member state and must not create a constraint on the operations of DTT in this band, including for neighbouring countries should be observed.

8. Market review of broadcasting and wireless broadband services

A pan-European review of market developments in broadcasting and broadband should be undertaken prior to any further consideration being given to introducing IMT services into the 470-694MHz band.

For the reasons outlined above, any such review will inevitably cause uncertainty for DTT operators, consumers and the wider market. We consider it vital that the Commission

¹⁴ Wik/Aegis, Study on Impact of traffic off-loading and related technological trends on the demand for wireless broadband spectrum, <http://bookshop.europa.eu/en/study-on-impact-of-traffic-off-loading-and-related-technological-trends-on-the-demand-for-wireless-broadband-spectrum-pbKK0113239/>

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recognises the challenges posed for broadcasters by the current round of discussions and the commercial and consumer disruption that will occur as a result of 700MHz.

We therefore agree with the Lamy Report view that terrestrial broadcasting requires 'reassurance...for a next cycle of investment' which in practice means ensuring reasonable certainty concerning access to spectrum below 700MHz. We would also agree with the report's view that 2025 would be an appropriate deadline for any further review of how UHF spectrum is used and that this should also be reflected in EU policy positions for WRCs up to this date.

Such an approach would allow for investment in the next generation of DTT services integrating catch-up and streamed content and for consumer demand for such services to be properly assessed. It would also encourage existing and new spectrum available for mobile broadband to be fully utilised before embarking on further costly clearances which may not be necessary.

Any such review should involve analysis of current consumer behaviour and observable trends. Forecasts of future demand for IMT capacity should take account of the potential for technical efficiencies rather than more spectrum and be subject to rigorous and objective scrutiny.

End