

DigitalUK



**Response to Ofcom consultation**

**Award of the 700 MHz and 3.6-3.8 GHz spectrum bands**

12 March 2019

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## About Digital UK

Digital UK leads the development of Freeview, the nation's most widely used television platform. Our goal is to create the best free TV service, both live and on-demand.

We work with world-leading companies to deliver television which informs, educates and entertains, ensuring every home in the UK can access high-quality television without the need for a monthly subscription.

Partnerships are crucial to what we do. We collaborate with a broad range of organisations in pursuit of our goals and are owned by Arqiva, the BBC, Channel 4 and ITV.

## About DTV Services Ltd

DTV Services Ltd, widely known as Freeview, is responsible for the marketing and communications of the Freeview TV platform. We work closely with our sister organisation, Digital UK, on ensuring that Freeview is the best possible service it can be. Our main focus is ensuring that consumers are aware of how Freeview is innovating to meet changing viewing behaviour and expectations, and perceive it as a credible and compelling TV platform. We are owned by Arqiva, the BBC, Channel 4, ITV and Sky.

## About Freeview

Freeview is the largest and most important free-to-view TV service in the UK. Thanks to the coverage and reach of Digital Terrestrial Television (DTT), upon which it relies, Freeview is used in over 18 million UK homes for TV reception. As of late 2018, 10m homes have Freeview on their main TV set, up 1m since early 2016:<sup>1</sup> in an era of intense competition and great choice for UK viewers, Freeview is the only major broadcast service to have grown its presence on main TV sets, where most of video viewing takes place. Other service providers, including YouView, BT, TalkTalk, Plusnet and EE also rely on DTT for providing linear TV services to their customers, bringing the total number of homes with DTT on their main TV sets to 11.9m.<sup>2</sup>

Freeview delivers very significant benefits to the UK society and economy,<sup>3</sup> through:

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<sup>1</sup> Source: BARB Establishment Survey, number of DTT-only homes excluding YouView, BT, TalkTalk, Plusnet, change over Q1 2016 to Q4 2018, four quarters rolling data.

<sup>2</sup> Source: BARB Establishment Survey, number of DTT-only homes, Q4 Annual data

<sup>3</sup> Past studies have estimated private value of DTT use of spectrum in the range of £3 – 5.5 bn, excluding any wider social value from universal, free-to-view access to PSB and other UK broadcaster services. See *Impact of Radio Spectrum on the UK Economy and Factors Influencing Future Spectrum Demand*, Analysys Mason, November 2012, <https://www.gov.uk/government/publications/impact-of-radiospectrum-on-the-uk-economy-and-factors-influencing-future-spectrum-demand>. And *Valuing the use of spectrum in the EU: an independent assessment for the GSMA*, Plum Consulting, 2013, [http://plumconsulting.co.uk/pdfs/Plum\\_June2013\\_Economic\\_Value\\_of\\_spectrum\\_use\\_in\\_Europe.pdf](http://plumconsulting.co.uk/pdfs/Plum_June2013_Economic_Value_of_spectrum_use_in_Europe.pdf)

- choice for consumers: Freeview's compelling free-from-subscription TV services sustain competition in TV platforms and support consumer choice in the broader converged market. Freeview's offer ensures UK viewers can continue to enjoy high quality TV without having to be tied to a bundle;
- citizens benefits: through DTT, Freeview secures universal availability of PSB and other UK TV services;
- un-intermediated, mass market audience reach for broadcasters: Freeview's scale and reach sustain the economics of free to view broadcasting in the UK;
- innovation in consumer electronics through open standards: working with our partners, we coordinate the technical requirements for DTT receivers, across Freeview and Freeview Play products. This sustains the horizontal market and encourages manufacturers to innovate while ensuring interoperability and broad choice of quality products for viewers.

Freeview Play is our new hybrid broadcast broadband TV service. It brings terrestrial TV channels, with a growing choice of catch-up and on-demand services. Freeview Play comes built-into a new generation of televisions and set-top boxes, making it easier than ever for viewers to watch what they want, when they want.

Freeview Play is already actively used in over 3.6m homes just over 3 years from launch. TV viewing habits are changing, but the success of Freeview Play shows that a compelling free-to-view offer remains very popular with UK viewers.

Our vision is for Freeview Play to become the new normal for UK viewers, as the platform makes – over time – a journey towards becoming a fully hybrid service.

Throughout this journey, DTT will remain a core and essential enabler of the Freeview service. While IP services are becoming increasingly popular in delivering great choice to UK viewers, it is unclear whether and when IP networks may become viable substitutes for the delivery of a truly free, universal, reliable, easy to use, compelling TV service that protects the key benefits of a strong UK broadcasting ecology.<sup>4</sup>

DTT will therefore remain an extremely important use of spectrum for the foreseeable future.

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<sup>4</sup> Barriers to the role of IP networks in fulfilling these roles include: the coverage, capacity and reliability of future broadband networks; questions around the commercial models for future IP delivery, including cost economics and broadcaster's ability to reach mass market audiences across a fragmenting connected TV market, where the availability and prominence for PSB services are not guaranteed through the legislative framework (unlike in broadcast); the lack of universal broadband internet take-up, driven by limited relevance of broadband services to the population segments that make no or limited use of the internet; the need to resolve fundamental policy questions about the nature of 'free' TV in scenarios in which broadband subscriptions become essential to TV reception.

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## General remarks

Digital UK and Freeview welcome the opportunity to respond to this consultation

As Ofcom notes in its Spectrum Management Strategy statement,<sup>5</sup> this decade is seeing growing competing demands for spectrum resources – as the requirements of many services are either going to grow or at least remain constant. This makes efficient use of spectrum as important as ever.

A key source of pressure are the growing demands of mobile data services. Through this award, Ofcom is seeking to enable the deployment of new 5G services in the 3.6-3.8 GHz band, and to enable greater efficiency for MNOs in the delivery of wide-area 4G networks through the 700 MHz band.

Ofcom has also made improvements in 4G mobile coverage a central objective of this award – one that we support strongly due to the important consumer and citizen benefits that flow from reliable, widespread mobile coverage.

It is important to recognise that mobile coverage improvements will be a consequence of Ofcom's proposed interventions – not of the availability of 700 MHz spectrum to MNOs per se. The propagation of mobile signals at 700 MHz will be very similar to those at 800 and 900 MHz, other things equal. Absent Ofcom's proposed coverage obligations, the 700 MHz band would simply enable 'more of the same' capacity, acting as a substitute to the need to build additional mobile sites,<sup>6</sup> helping MNOs control their cost base as demands for mobile data increase.

But releasing new spectrum bands for mobile use is only one of a variety of possible tools to increase mobile networks efficiency. Others include

- Re-farming existing spectrum to the latest most efficient technologies (esp 2G and 3G to 4G and 5G), something that is becoming increasingly feasible thanks to widespread diffusion of VoLTE;

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<sup>5</sup> [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0021/71436/statement.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0021/71436/statement.pdf)

<sup>6</sup> In its CBA underlying the decision to make the 700 MHz available for mobile data, all the quantified benefits relate to avoided MNO site deployments costs, both to increase overall network capacity and to deliver improved network performance in hard to reach locations. See section 4 of the Ofcom statement available at [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0024/46923/700-mhz-statement.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0024/46923/700-mhz-statement.pdf)

- new carrier aggregation techniques that enable MNOs to better leverage capacity in different spectrum bands;
- in-home WiFi offloading;
- the tactical deployment of low cost small cells where demand is greatest;
- the opportunity to defragment mobile spectrum holdings.<sup>7</sup>

All spectrum users are expected to use such an important resource efficiently. DTT broadcasters have a strong track record in this respect. The clearance of the 700MHz band, which will see the platform give up a third of its spectrum while retaining all existing services, is just the latest example. Coupled with investment in improved compression technologies, DTT has achieved a five-fold increase in spectrum efficiency (see figure below) since the late 1990s. We now mandate that Freeview Play products are based on the DVB-T2 standard and HEVC compatible.

*Increase in DTT spectrum efficiency 1998 – 2020*

Dates	Number of <u>muxes</u>	Number of services	DTT spectrum <u>utilised</u> (MHz)	Spectrum <u>deployed</u> (MHz)	Number MHz per service	Efficiency increase from 1998
1996	Analogue	<b>5</b>	470 – 854	<b>368</b>	73.6	-
1998	6	<b>24</b>	470 - 854	<b>368</b>	15.3	X 1.0
2002	6	<b>32</b>	470 – 854	<b>368</b>	10.5	X 1.4
2012	6	<b>48</b>	470 - 790	<b>312</b>	6.5	X 2.4
2017	9	<b>89</b>	470 - 790	<b>312</b>	3.5	X 4.4
2020	7/9?*	<b>83</b>	470 - 694	<b>224</b>	2.7	X 5.7

\*Two interim multiplexes licensed to 2020

Experience from DTT clearance programmes highlights that spectrum re-purposing can be a huge undertaking. Spectrum at 700 MHz is now being cleared of DTT use thanks to a major infrastructure programme that involves significant complexity, hundreds of millions of pounds of incurred costs and material disruption to viewers, with up to 20 million of TV sets requiring a retune and a material number of households requiring TV aerial replacements.

<sup>7</sup> Digital UK commission research which indicated that de-fragmenting mobile bands at 700, 800, and 900 MHz could offer significant spectrum efficiencies. See [http://www.digitaluk.co.uk/\\_data/assets/pdf\\_file/0016/93400/Aetha\\_Consulting\\_-\\_The\\_Defragmentation\\_Dividend\\_15\\_November\\_2017.pdf](http://www.digitaluk.co.uk/_data/assets/pdf_file/0016/93400/Aetha_Consulting_-_The_Defragmentation_Dividend_15_November_2017.pdf)

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It is therefore clear that any potential further repurposing of low frequency spectrum for mobile use post 700 MHz clearance should only be assessed when there is compelling evidence of demand for further low frequencies and other options to increase mobile network efficiency have been exhausted.

It is highly unlikely that the case for any such repurposing would be in the best interest of UK citizens and consumer in the foreseeable future. This is because:

- on the one hand, mobile demands for low frequency spectrum are decreasing, so it likely that the benefits of any future repurposing would be significantly lower than those potentially flowing from the 700 MHz award. Ofcom recently noted that “mobile demand [of frequencies in the spectrum range currently used for DTT] has substantially diminished as investments in 5G require spectrum at higher frequencies”.<sup>8</sup> We agree with this assessment;
- on the other, the costs of any future repurposing would be significantly higher than those associated with the 700 MHz clearance programme. As we discuss above, DTT will remain an essential component of the UK broadcasting ecology for a long time to come. The 700 MHz clearance programme largely preserves the coverage and capacity of the six main National Multiplexes (including PSB services). But, should a further reallocation of spectrum away from DTT be considered in future, it is highly unlikely that this could be achieved again.

Stakeholders in Freeview require certainty on security of tenure for DTT spectrum. This is essential to ensure that the substantial investments they are making to support Freeview’s evolution to a fully hybrid future do not face undue jeopardy. Ofcom and Government should take appropriate steps to provide this certainty.

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<sup>8</sup> [https://www.ofcom.org.uk/data/assets/pdf\\_file/0026/111896/Public-service-broadcasting-in-the-digital-age.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0026/111896/Public-service-broadcasting-in-the-digital-age.pdf), page 13, paragraph 4.5.

## Coexistence issues at 700 MHz (consultation questions 7 and 8)

We concur with Ofcom that likely similarities between the coexistence issues at 800 MHz and 700 MHz make the experience of the 800 MHz mitigation scheme a valuable reference point to design a future scheme.

However, we note that the footnote on Table 11.2 includes an allowable tolerance of 2dB to power limits. We believe, based on the Commission Implementing Decision, that such a tolerance should only be applied to the in-block power limits for UEs. Applying this tolerance to out-of-band power limits could result in additional interference and different coexistence issues to 800MHz. We request that Ofcom reviews its drafting here to be clearer than the 2 dB tolerance only applies to the in-block power limit.

We agree with Ofcom that regulatory intervention is necessary to ensure effective mitigation action, regardless of the fact that the scale of the issue (in terms of proportion of households likely to require assistance) is likely to be small. The underlying principle of any future scheme needs to be the same as for 800 MHz mitigation, i.e.:

- that the overall aim of the scheme is to restore TV reception for DTT viewers that experience interference issues
- that running the scheme must be the responsibility of the new spectrum users causing the interference, i.e. the MNOs, and that DTT stakeholders do not face any incremental cost

We agree with Ofcom that it is appropriate for a future scheme to retain operational flexibility on how to deliver against its overall objectives in a proportionate manner, as long as provisions are made for effective monitoring and enforcement action.

The scheme operated by at800 has been successful in delivering mitigation action balancing effectiveness and proportionality. We therefore believe that any future scheme should be modelled around the at800 experience.

In particular, there are several specific aspects of Ofcom's consultation proposals and Draft Guidance Note that should be amended in light of the learnings of 800 MHz mitigation:

1. The 700 MHz mitigation scheme should be appropriately resourced and dimensioned. Ofcom refers to how, as of August 2018, the number of confirmed interference cases was c. 25,000, far lower than the number of homes initially predicted. This data point alone could lead to misleading dimensioning assumptions. It is crucial to clarify that 25,000 is the number of homes that have been diagnosed by at800 with a 4G interference issue as a consequence of an installer visit. at800 however handled c. 531,000 contacts and estimates c. 264,000 households required mitigation action. This figure includes individual homes that were sent a filter reactively and for whom the filter solved the issue (based on survey results), and the households supported via filters for communal blocks. It however excludes a separate group of c. 997,000 homes who were proactively sent a filter at the start of the programme, before modelling assumptions about interference impacts were subsequently amended

2. The 700 mitigation scheme should make provisions for supplying appropriate filters free of charge to all DTT viewers that require assistance (where filters can be an effective solution). Ofcom suggests options for consumers who rely on DTT as a secondary source of TV reception to buy filters in retail outlets, but we do not see this as a viable option, especially because of the significant scope for consumer confusion in this process. The at800 Code of Service allows for appropriate filters to be sent to DTT viewers regardless of whether they have other platforms or not – even though the right to a subsequent installer visit free of charge (should the filter not work) is only reserved to those relying on DTT as their sole broadcast platform. These arrangements strike a better balance between proportionality and effectiveness of mitigation action than those Ofcom sets out in its draft proposals
3. Broadcasters should be consulted by MNOs as they design the joint plan and should have a formal role in any subsequent monitoring mechanism. Governance for the 800 MHz mitigation scheme has formally involved representatives from both the mobile and broadcasting sectors. This has been a positive experience and shows the value that a cross-industry monitoring body can bring, both in terms of drawing from different kinds of expertise, and in terms of building trust and positive engagement between stakeholders with different incentives
4. The 700 mitigation scheme should be operationally ready to assist viewers by the time MNOs begin to deploy mobile services in the 700 MHz band. Ofcom proposes to give MNOs 10 weeks to submit a joint plan, with a further 6 weeks for Ofcom to evaluate it and respond. With the award planned to take place in Q1 2020 and spectrum becoming available in Q2, it is not clear that these timescales ensure sufficient time to mobilise the scheme before MNOs begin deployment. Ofcom should therefore consider requiring parties interested in bidding for 700 MHz award to agree the joint plan before the award – noting that only decisions on cost apportionment are strictly contingent on the outcomes of the award
5. Ofcom should require MNOs to explicitly consider, in their joint plan, how to reach out to homes that received assistance for 800 MHz interference, subject to GDPR requirements and in so far as interference issues at 700 MHz may affect the same homes.

As part of its assessment, Ofcom discusses alternative arrangements where telephone advice lines operated by broadcasters could be tasked with an initial assessment of whether consumers' reception issues may be due to mobile interference, before passing cases to a MNO-funded mitigation scheme. The consultation drafting is ambiguous as to whether it intends that approach to apply to all options for subsequent mitigation.

This option should be ruled out because of major downsides for both viewers and broadcasters. DTT stakeholders operate multiple advice lines and the lack of a single port of call for consumers suffering from interference issues would create unnecessary complexity (due to multiple possible consumer journeys) and confusion. Also, a formal role for broadcasters (or a specific broadcaster entity, like Freeview) would in effect impose cost and reputational risk linked to reception issues that are caused by third parties.

The experience of the 800 MHz mitigation scheme provides again a useful reference. The advice line operated by at800 has developed effective triage processes and consumers have benefitted in a single point of contact for 4G interference issues – making outbound consumer communications simpler and more effective.

Our view is without prejudice to how broadcasters would still obviously seek to collaborate with any future MNO-funded body to deliver the best interest of DTT viewers – for example through warm transfers across different call centres like those currently in place between the Freeview and at800 advice lines.

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## Use of the centre gap for COM7 and 8 (consultation question 12)

We welcome the fact that Ofcom is explicitly recognising the prospect of delayed deployment of SDL in the 700 MHz centre gap and is now looking to make arrangements for the ongoing operation of COM7 and 8 to secure optimal use of spectrum. But we see the conditions Ofcom proposes to set as being overly restrictive, creating unnecessary risks for the option they are meant to keep open.

When Ofcom first proposed SDL use of the centre gap, we expressed strong doubts that MNOs would be ready to make use of the spectrum from 2020.<sup>9</sup> Events to date support and reinforce our view:

- To date no consumer handsets for sale in Europe support SDL use of the centre gap. Even if compatible handsets were to appear in the market later this year, it would – as a minimum – take several more years before a viable critical base of addressable devices would build up
- Centre gap spectrum configured for SDL has gone unsold in three recent 700 MHz auctions, respectively in Italy and Sweden and Switzerland. To date only one MNO has a licence for SDL use of the centre gap in the EEA

Because of the above, Ofcom is now proposing to set a minimal reserve price for spectrum lots in the centre gap: (£1m per 5 MHz lot vs proposed reserve price levels of £100-240m for 2x5 MHz lots in the FDD bands). This confirms our expectations that the value of SDL use is likely to be low.

It is therefore clear to us that Ofcom's policy position on the centre gap reflects a questionable preference for a future uncertain spectrum use, against a current, certain use of spectrum that delivers value to DTT viewers and broadcasters.

Specifically, we question the following aspects of Ofcom's proposals

1. That the duration of interim licences for Arqiva could be as little as one month. This would have a material impact on over 5 million viewers that watch the channels carried on COM7 and 8 every month<sup>10</sup>
  - a. DTT viewers will need to be properly informed that they may lose reception to up to 20 channels. Failure to do so will cause significant confusion. Many viewers may assume that channel losses are due to issues with their equipment, with a risk that they bear unnecessary costs for professional support or equipment changes. DTT stakeholders (including broadcasters, multiplex operators, Digital UK / Freeview) will need to conduct preparatory work to agree messaging and

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<sup>9</sup> See Digital UK response to Ofcom consultation "Maximising the benefits of 700 MHz clearance", 20 May 2016, available at: [https://www.ofcom.org.uk/data/assets/pdf\\_file/0018/78111/digital\\_uk.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0018/78111/digital_uk.pdf)

<sup>10</sup> Source: BARB Viewing Panel data via TRP, combined reach based on 10 mins consecutive viewing through the DTT platform for BARB-tracked channels on COM7 and 8, monthly average for Jul to Dec 2018.

coordinate communications and outreach activities. We will then need to brief our advice line operators, as well as ensure all other relevant advice lines for DTT viewers (inc those operated by broadcasters, other TV platform operators relying on DTT and TV manufacturers) are also appropriately briefed. These preparatory steps require several months

- b. Broadcasters currently using COM7 and 8 capacity will need to radically adjust their business plans, from making alternative distribution arrangements, to amending their advertising and sponsorship deals to reflect changes in their expected audience reach. These are variables that can make or break the case for free-to-air broadcasting, and such short renewal periods for Arqiva would create a level of uncertainty that forces many of these broadcasters to pre-emptively abandon the platform
- c. As these channels cease transmissions on DTT, there is a risk that a proportion of viewers could decide to switch platform.<sup>11</sup> This process alone could take weeks for consumer to arrange and see through, which would mean that for a sustained period of time viewing choices for these viewers will be unduly constrained
- d. The prospects of a significant reduction in HD capacity and of a material number of channel closures would raise a vicious circle of reputational risk for the Freeview platform as a whole – reducing the extent to which it delivers competitive benefits in the TV platforms market acting as a constraint to pay TV

Given these negative impacts and the very low likelihood of SDL use in 2021, Ofcom should set a minimum duration of 12 months for interim licences for Arqiva.

2. That Arqiva needs to demonstrate an agreement with winners of centre gap spectrum. It is very likely that MNOs will acquire the spectrum for a low price (based on the option value of uncertain future SDL developments), and with minimal sunk costs will have very little incentive to engage with Arqiva to allow the ongoing operation of COM7 and 8. And even assuming appropriate incentives, with a spectrum auction coming up potentially in less than a year there is simply very little time to engage in what would inevitably be complex negotiations. Rather than assuming MNO use unless proven otherwise, Ofcom should grant Arqiva an interim licence only to be revoked when MNOs demonstrate they are ready to effectively deploy relevant networks and services.
3. That EU legislation precludes DTT use of the centre gap post 2022. Uncertainties on whether and how EU legislation will apply in the UK post Brexit are now just too significant to make informed policy decisions in this respect. As a minimum, Ofcom should explicitly allow the option that the 2022 legal deadline may not necessarily apply.

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<sup>11</sup> Evidence we shared with Ofcom in the confidential version of our submission in response to the 2016 consultation titled 'Maximising benefits of 700 MHz clearance' shows that a reduction in the level of TV channels choice offered by Freeview would make a material proportion of viewers consider a TV platform switch – and that this impact is far greater than the viewing share of the affected channels would suggest.

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In summary, Ofcom should reconsider its proposals on COM7 and 8 to ensure they are consistent with its duties to protect the interests of consumers and citizens. This means that, even though these multiplexes may cease transmissions after 2020, Ofcom has a duty to ensure that related impacts on viewers are appropriately managed. The current consultation proposals do not secure this.

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