

*Championing  
excellence and diversity  
in broadcasting*



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## **VLV RESPONSE TO THE OFCOM CALL FOR INPUT**

### **Preparations for World Radiocommunication Conference 2023 (WRC 23)**

### **UK provisional views and positions for WRC-23**

**September 2022**

## **INFORMATION ABOUT THE VLV**

The Voice of the Listener & Viewer (VLV) is an independent, not for profit membership-based charity, free from political and sectarian affiliations. VLV supports high quality broadcasting which maintains the democratic and cultural traditions of the UK. We support the independence and integrity of the BBC and encourage work which demonstrates commitment to the principles of Public Service Broadcasting (PSB). VLV is a charitable company limited by guarantee (registered in England and Wales No 4407712 - Charity No 1152136).

### **Executive Summary:**

1. VLV welcomes this opportunity to respond to Ofcom's Call for Input in preparation for the World Radiocommunication Conference to be held in November 2023 (WRC23).
2. VLV works to represent the interests of citizens in broadcasting policy.
3. VLV is broadly supportive of Ofcom's approach to WRC23 especially as it relates to spectrum allocations for Broadcast TV and its support services.
4. VLV is firmly opposed to granting Mobile Data Service (MDS) operators Co-Primary access to the spectrum band 470-694 MHz (the "600MHz" band), currently allocated on a Primary basis to Broadcasting Digital Terrestrial Television (DTT). Our reasons for this view are outlined below and have been given in previous responses to consultations relating to DTT spectrum.<sup>1</sup>
5. In its response (April 8<sup>th</sup> 2022) to Ofcom's consultation on the spectrum needs of MDS VLV has already welcomed the UK government's recent renewal of DTT licences until 2034. It is gratifying that government has demonstrated its confidence in the need for continuing support for DTT as a means of delivering Public Service Broadcasting (PSB).
6. In that response VLV strongly agreed that there is much that the MDS operators can do with existing and newly allocated spectrum to optimise its use before seeking access to the 600 MHz band.
7. Our detailed reasoning for these views is given in our responses below.

### **1 VLV General Response**

- 1.1 VLV welcomes this opportunity to respond to Ofcom's Call for Input in preparation for the World Radiocommunication Conference to be held in November 2023 (WRC23).

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<sup>1</sup> <https://www.vlv.org.uk/wp-content/uploads/VLV-response-to-Ofcom-Mobile-Networks-and-Spectrum-meeting-future-demand-for-mobile-data-final-draft-.pdf>

- 1.2 VLV is fully aware of the function and importance of these conferences. Considering that global, regional and national interests may be disparate, nevertheless there is need for harmonisation of regulation, standards and practices for economic and operational reasons.
- 1.3 VLV is aware that the UK, being part of Europe and involved in its regional radiocommunication planning, is included for administration purposes in Region 1 of the International Telecommunications Union (ITU). Region 1 comprises Europe, including the whole of Russia, the Middle East and Africa. Consequently VLV is also aware that WRCs consider a wide range of radio communication applications, some of which may be in contention for limited spectrum resources.
- 1.4 We note the useful introductory remarks in Sections 1 and 2 of the consultation document which provide details of the context and scope of WRC meetings. Section 3 discusses the agenda for WRC23 linking items to specific applications and services identified as important in the future and requiring spectrum resources. We note the extensive and informative Annexes.
- 1.5 As required by Resolution 235 of WRC15, Clauses 1.5 (Overview) and 1.11 (Agenda items) draw particular attention to the agenda item that relates to the use of the “600 MHz” band currently allocated on a Primary basis to Digital Terrestrial Broadcasting (DTT). For several WRCs past there have been repeated demands from MDS operators to be given access to this band either entirely or on a Co-Primary basis.
- 1.6 VLV has a primary interest in Public Service Broadcasting (PSB) and is particularly concerned that the delivery of these highly valued services which use DTT technology should continue to have Primary access to sufficient spectrum to fulfil their public purposes, as set out in the Communications Act 2003. We are therefore concerned by the erosion of the spectrum allocated to DTT in recent years and remain concerned about its future, given the demands of MDS.
- 1.7 VLV is therefore gratified to note that the Ofcom paper devotes Section 5 to the discussion of Broadcast TV and Support services and that Ofcom considers this to be a High Priority agenda item (see Annexe 5, page 70, agenda item 1.5). VLV’s detailed response to this Section is given below.
- 1.8 Section 4 reviews the growing needs of Wireless Broadband Connectivity as identified in detail in 5 agenda items. Insofar that these undoubtedly valuable broadband services are expected to require spectrum in the GHz bands and do not encroach upon the 600 MHz band, VLV notes these items and offers no further comment here.
- 1.9 We note Sections 6, 7, 8 and 9 relating to the needs of Satellite communications systems, Transportation, Science and Administration. VLV recognises the developing spectrum needs of these applications.

- 1.10 VLV is anxious to see that there is a reasonable balance between commercial exploitation of spectrum and its alternative uses for the public good, such as PSB, but also for scientific purposes. For many years space exploration has also used spectrum to enable communication with local and deep space probes such as Voyagers and, more recently, the Hubble and now the Webb telescopes. Whilst this is recognised and spectrum bands are allocated and protected, there is need for vigilance since, as the proliferation of orbiting spacecraft increases, especially by private commercial organisations (rather than national agencies), the pressure on spectrum will intensify<sup>2</sup>.

## **2 Response to Section 5: “Broadcast TV & Support Applications”**

- 2.1 VLV welcomes and supports Ofcom’s analysis of the future use of the 600 MHz band. We also welcome and support Ofcom’s provisional conclusions arising from that analysis.
- 2.2 The Ultra High Frequency (UHF) band of radio waves is located between 300 MHz and 3 GHz. A portion of this band, 470 to 862 MHz, was allocated to television broadcasting on a Primary basis in 1961, in the analogue era. The fact that this allocation has been in place for 61 years should not suggest that it is an “out of date” artefact of the past. On the contrary, its longevity points to a real need for continuity in delivering public broadcasting services to which this band is particularly suitable. Despite the clear ongoing public value in this band, MDS operators continue to demand access to it for commercial purposes.
- 2.3 During the approach to switchover in 2012 and since, VLV has contributed a number of responses to Ofcom consultations relating to the re-allocation of parts of the UHF band to MDS.
- 2.4 Broadcasters have, since the 1990s, pioneered the adoption of digital technologies that have enabled a much greater range of TV services and considerably improved spectrum efficiency. This has enabled the release of 43% (168 MHz) of the original 470-862 MHz spectrum to the MDS operators.
- 2.5 The highly successful Freeview platform is now confined to the 470 to 694 MHz band (“600 MHz”) where it is able to provide a highly valued public service, available to all, free-to-air. Any further reductions in spectrum will seriously risk the viability of the platform by reducing services and coverage. Coverage in some areas is already limited because of limited spectrum.
- 2.8 The demands of the MDS operators will not diminish and VLV expects them to be asserted once again at WRC23. However in Ofcom’s recent consultation on Spectrum for Mobile Networks (closed on 8<sup>th</sup> April 2022) it seemed clear that there is much that the MDS operators and their technology providers can do to make better use of the spectrum they already have, including new

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<sup>2</sup> *Although it is outside the scope of radiocommunications these earth orbit spacecraft fleets tend to occupy non-Geostationary orbits and so cause considerable interference to optical astronomy by reflecting light from bright objects moving through a field of view.*

allocations in the GHz bands. VLV strongly agrees with this suggestion and made that view clear in its detailed response to that consultation (see footnote 1).

- 2.9 During the next decade much can happen technically, as well as politically and economically, that could render injudicious any premature judgement made at WRC23 about the 600MHz band. It must be recognised that citizens and consumers value PSB/DTT services and will continue to do so at least until a genuinely viable and truly equivalent means of delivery of PSB is made available. Viewers and listeners do not react rapidly to radical changes, needing time to get full value from investments in existing reception equipment. They also will wish to minimise the expense of receiving PSB services so any alternative delivery system that involves additional costs will not be welcomed. The only acceptable cost of this would be equivalent to the “free to air” status of current DTT.
- 2.10 It must be recognised that replacement of legacy systems requires advanced planning because the process is costly, lengthy and disruptive especially to consumers. Any plans to improve any networks using spectrum must be signalled well in advance and be thoroughly researched and evaluated before any action is taken. Any further radical change to public services such as PSB must be subject to public discussion. Once lost, the DTT spectrum will be virtually impossible to recover.
- 2.11 It must be noted that in various countries (eg the USA and Australia) some of the original analogue era VHF broadcasting bands are still used for some DTT. However, in the UK these bands have been allocated to other services eg various services including amateur radio in band 1 (21 MHz, was BBC TV), Digital Audio Broadcasting (DAB) in VHF band 3 (56 MHz, was ITV) and FM radio (20 MHz) in band 2 and so are unavailable as alternatives. This spectrum is clearly fragmented.
- 2.12 VLV welcomes the tone of the Ofcom approach to the use of the 600 MHz band and is heartened that the UK government has renewed DTT licences until 2034. We expect therefore that Ofcom, as the UK delegate to WRC23, will defend these decisions robustly and will protect UK broadcasters’ interests at the conference.

### **3 Scope for and consequences of Co-Primary Access in the 600 MHz band**

- 3.1 VLV is **strongly opposed** to any further subdivision of the 600 MHz band as a means of spectrum sharing to allow Co-Primary access for MDS for reasons set out below. The consequence of such a change for PSB would be a catastrophic reduction in the wide range of services now available via Freeview.
- 3.2 Generally the ITU principle is that common global standards and spectrum allocations are preferred for a number of reasons, not least the economies of scale in the manufacture of transmission and consumer equipment. In the

choice of telecommunications standards and associated spectrum allocations this choice is clearly important in mobile networks but the same principle can be invoked for Public Services and DTT technology. Despite this, there are several good reasons why some regions and nations choose different standards. Each nation in a Region is sovereign and may, if it wishes, adopt its own standards.

- 3.3 ITU Region 1 is a large somewhat disparate area (Figure 1). It includes the whole of Western Europe including the Russian Federation, and some of its erstwhile southern republics, which extends all the way East to the Pacific Ocean. It also includes the whole of Africa and parts of the Middle East. There are land borders with Region 2 that includes China and other Middle Eastern countries.
- 3.4 At these borders there is potential for inter-regional interference if different spectrum allocations are used. Similarly, within a Region there is potential for interference at borders between national networks using different standards and practices. Neighbouring countries or regions will each need to protect themselves from mutual interference by co-ordinating their use of spectrum near the borders.
- 3.5 One essential element of spectrum planning is the management of interference. The geography of Region 1, where Africa is separated from mainland Europe by the Mediterranean sea, there is scope for mitigation of interference levels. If the African states decided that Co-Primary allocation for MDS and DTT was desirable, the impact on DTT users in Europe could possibly be managed. However the Middle Eastern states would not have that degree of protection.
- 3.6 The map of African and other countries (Figure 2) that have selected a DTT standard using DVB-T shows an almost complete adoption in Africa<sup>3</sup>. It is therefore possible that Africa as a whole would not be able to allow Co-Primary without having to abandon DTT because of their mutual incompatibility for spectrum sharing.
- 3.7 If the amount of spectrum required for DTT in these states is small, because of a limited range of services, then a degree of spectrum sharing could be technologically possible by using further subdivision of the 600 MHz band. In this case Co-Primary allocation would only be required in one segment of the 600 MHz band, probably at the upper end to be contiguous with existing mobile transmissions in the 700 MHz band.
- 3.8 Segmentation of the 600 MHz band is one compromise that may be discussed at WRC23. Figure 3 illustrates examples for giving Co-Primary status to MDS at the upper end of the 600 MHz band. The first option gives MDS 96 MHz (copying the UK 700 MHz plan supporting three MDS operators) leaving only 128 MHz, rather than 224 MHz, for DTT **and deleting the PMSE channel 38.** The second option gives only two operators similar access bandwidths with

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<sup>3</sup> [https://en.wikipedia.org/wiki/List\\_of\\_digital\\_television\\_deployments\\_by\\_country](https://en.wikipedia.org/wiki/List_of_digital_television_deployments_by_country)

NO Supplementary Downlink (SDL) so 56 MHz would be needed leaving 168 MHz for DTT and **retaining current PMSE access**. Either of these options and any similar plan to segment the band in UK DTT is undesirable.

- 3.9 These examples of band segmentation could only be possible if DTT/PSB services were to be seriously curtailed to reduce their spectrum requirements. This would do immense damage to the viability of DTT as a platform for PSB, reducing coverage and the range of content made available to viewers. It also seriously affects the viability and design of TV sets and causes difficulties for broadcasters and viewers having to make yet more disruptive changes to their transmission and reception equipment. Some countries in Europe and elsewhere in Region 1 may be able to accept possibilities of this kind.
- 3.10 Designating the 600 MHz band as Co-Primary does not mean the definite ultimate removal of DTT anywhere in a band, as was done with the 700 MHz band. Co-Primary status allows national regulators to decide individually whether their public is best served by allocating the band to DTT or to MDS. However, VLV opposes the designation of Co-primary status in Region 1 because the UK would likely face internationally pressure to change its use of the band, to the detriment of millions of viewers, because of the need to harmonise spectrum usage and avoid interference across borders. VLV believes that the 600 MHz spectrum has become too valuable to be given to commercial interest in preference to highly valued public services. As has been suggested in previous responses to Ofcom spectrum consultations, MDS operators have alternative spectrum available in the GHz bands. In the current financial climate can the MDS operators afford to develop further spectrum?
- 3.11 DTT uses state of the art technology developed by the broadcasters themselves. As well as the UK, many other countries world-wide also use the same DTT technology. DVB-T (Digital Video Broadcast-Terrestrial) is the most widely used digital television standard in use around the globe for terrestrial television transmissions. For historic reasons DTT is deployed globally in the 600 MHz UHF spectrum band between 470 and 694 MHz having superseded obsolete analogue transmissions.
- 3.12 DTT is not compatible with International Mobile Telecommunications (IMT) technologies as used by MDS operators. It follows that there is no real scope for spectrum sharing of the whole band in the UK (or any other country where DTT is a major public service), except for White Space Services, and so any change in the radio regulations to allow Co-Primary allocation of the 600 MHz band would be impractical, except in countries that have no DTT.
- 3.13 In conclusion, as stated above, VLV is **strongly opposed** to any further subdivision of the 600 MHz band as a means of spectrum sharing to allow Co-Primary access for MDS.
- 3.14 VLV is opposed to any agreement of Co-Primary allocation for the 600 MHz band in the UK. However, VLV recognises that whilst this may be the case in the UK, other countries in Europe and in ITU Region 1 may not have a strong

DTT PSB system and would therefore be willing to adopt Co-Primary status, perhaps in a segmented band. The clear danger of an agreement to do this in Region 1, even in a segmented band, is that it is further erosion of DTT and PSB services. This step will become a “Trojan Horse” leading to forced re-allocation in some DTT countries. This is against the fundamental purpose of PSB and the interests of UK viewers and consumers. It should be resisted and PSB/DTT in the UK should be supported by very clear and robust regulatory protection.

#### **4 Responses to Questions**

We have no responses to questions other than Question 7 which we provide below.

**Q7: *What are your views on the proposed approach for 470-694 MHz, recognising the national decisions already in place and taken for DTT multiplex licensing in the band, and the additional and supplementary spectrum made available for UK PMSE usage?***

For reasons given above, VLV strongly supports Ofcom’s approach to the discussion of the 600 MHz band at WRC23. We recognise that other members of ITU Region 1 may have a variety of alternative views that may emerge at the conference. However, VLV considers that the interests of UK viewers and citizens must be respected and protected.



5 Figures:

Figure 1: Map of ITU regions. Region 1 is in yellow

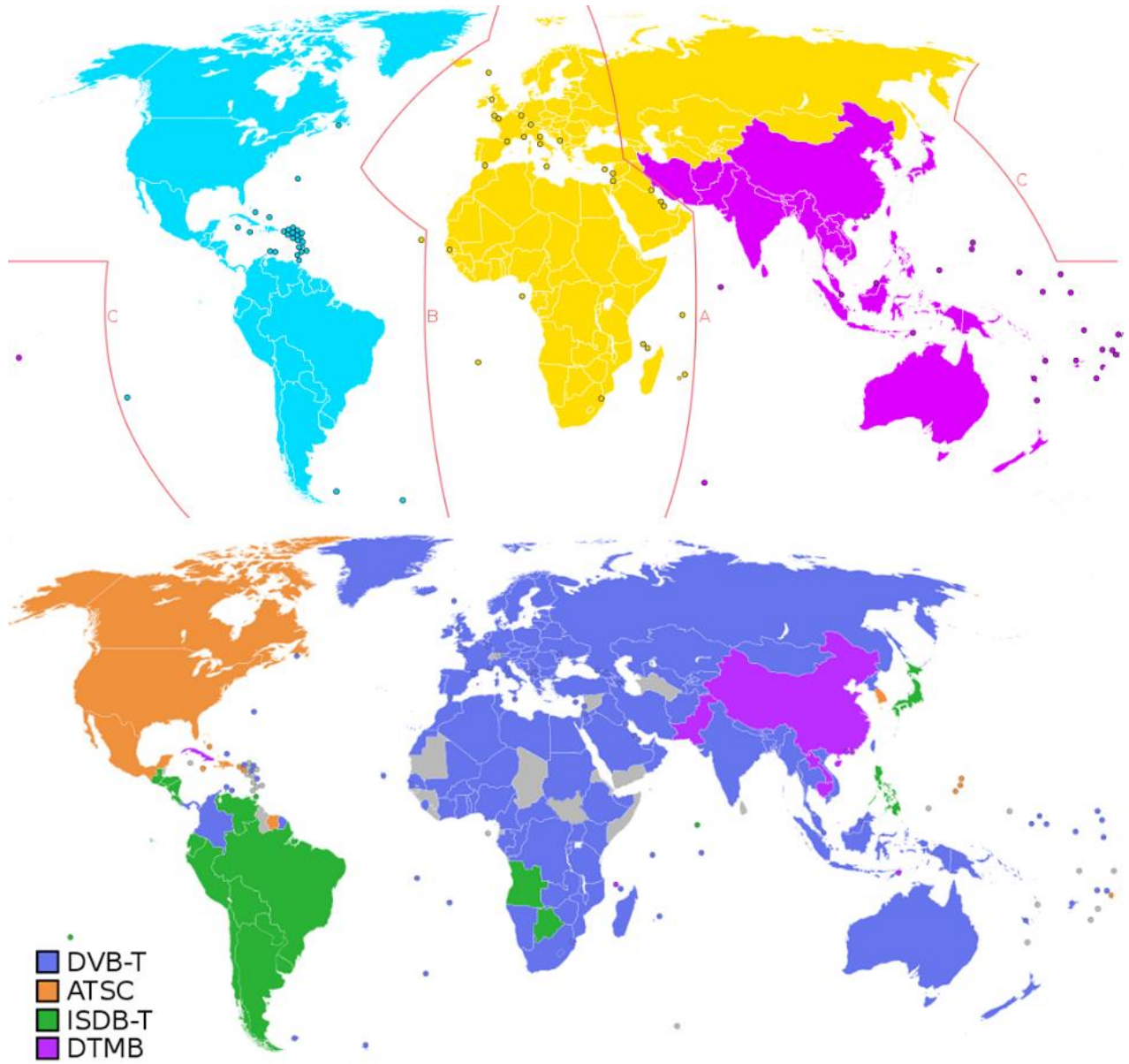
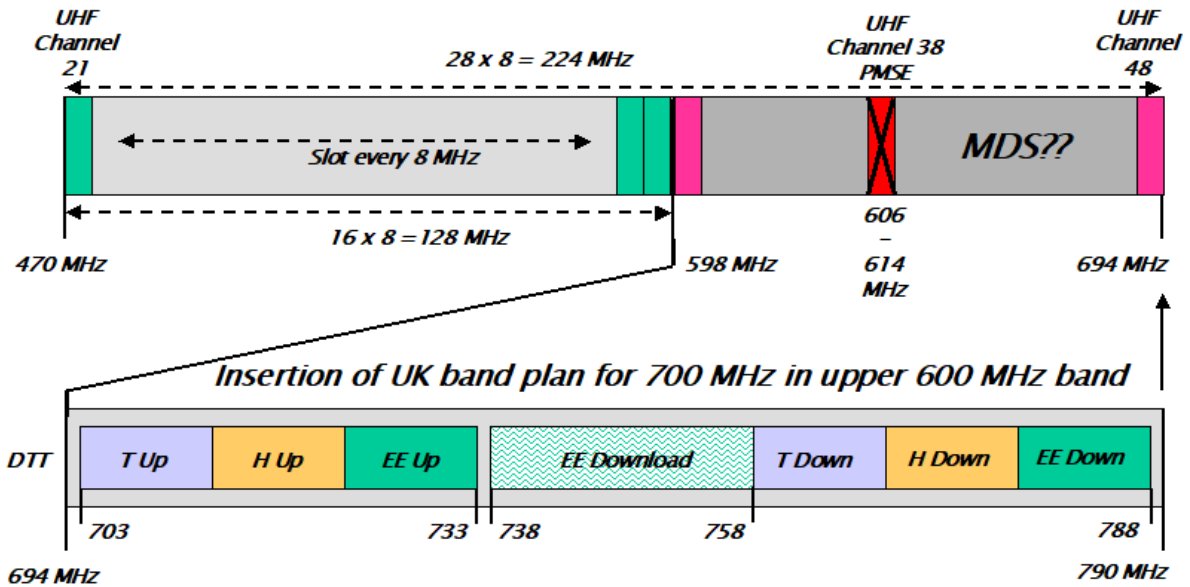


Figure 2: Map of Digital Television Standards. The royal blue areas are DVB-T

Figure 3: Possible segmenting of 600 MHz band to share with MDS

*Possible DTT Spectrum Plan for "600 MHz" Band*



*Possible DTT Spectrum Plan for "600 MHz" Band*

