

Cover sheet for response to an Ofcom consultation

BASIC DETAILS

Consultation title : Developing a framework for the long term future of UHF spectrum bands IV and V

To (Ofcom contact) : Marco Marini

Name of respondent : Arqiva Limited

Representing (self or organisation/s) : Organisation

Address (if not received by email) :

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What do you want Ofcom to keep confidential?

Nothing

☐

Name/contact details/job title

☐

Whole response

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Name Peter Couch

Signed (if hard copy)

Head of Strategy Development, for and on behalf of Arqiva Limited

About Arqiva

Arqiva has its headquarters in Hampshire, with other major UK offices in Warwick, London, Buckinghamshire and Yorkshire. It now has 9 international satellite teleports, over 70 other manned locations, and around 9,000 shared radio sites throughout the UK and Ireland including masts, towers and rooftops from under 30 to over 300 metres tall.

The company is owned by a consortium of long-term investors led by the Canadian Pension Plan Investment Board (CPPIB) and has two operating divisions: Broadcast & Media and Government, Mobile & Enterprise.

Arqiva is technology and service-neutral and operates at the heart of the broadcast and mobile communications industry. We are at the forefront of network solutions and services in an increasingly digital world. The company provides much of the infrastructure behind television, radio and wireless communications in the UK and has a growing presence in Ireland, mainland Europe and the USA.

Arqiva is a founder member of Freeview (Arqiva transmits all 6 Freeview multiplexes and is the licensed operator of 2 of them) and was a key launch technology partner for Freesat. Arqiva is also the licensed operator of the Digital One national commercial DAB multiplex.

Alongside the BBC, Arqiva's Spectrum Planning Group has played a critical role in planning Digital Switch Over (DSO).

In the communications sector the company supports cellular, wireless broadband, video, voice and data solutions for the mobile phone, public safety, public sector, public space and transport markets.

Major customers include the BBC, ITV, Channel 4, Channel 5, BSkyB, Classic FM, the five UK mobile operators, UKTV, Viacom, Turner Broadcasting, Metropolitan Police and RNLI.

Executive Summary

Arqiva welcomes the opportunity to respond to this call for input.

Ofcom's call for input represents an important first step for the start of a process which requires careful and considered thought, analysis and interaction with stakeholders. The long term future use of UHF spectrum bands IV and V will have very significant implications for participants – both present and future – in the communications industries, hardware manufacturers, retailers and, most importantly, consumers / citizens. This process must be carried out carefully, systematically and thoroughly.

Arqiva recognises that this call for input relates to both 600MHz and 700MHz spectrum. It implicitly recognises that a holistic approach should be taken when assessing future options for its use. Arqiva agrees with this and believes there is a case for taking this approach to an even wider set of spectrum bands. This is the only way to optimise spectrum use for citizens and consumers.

In relation to UHF spectrum bands IV and V, Arqiva makes the following key points:

- 600MHz and 700MHz have traditionally been allocated to broadcast television, both in the UK and internationally, as they are the most efficient part of the spectrum for this purpose. 700MHz has been critical to the unprecedented success of the DTT platform which in turn has freed up the 600MHz spectrum for future auction.
- The DTT platform is central to and necessary for the delivery of public policy objectives in broadcasting. It has sustained the delivery of high quality UK-originated content and promoted platform competition, delivering significant public policy objectives, value and benefits to UK consumers and citizens.
- No other broadcast platform can deliver these outcomes in the foreseeable future. It is therefore essential that the DTT platform is able to maintain its competitiveness in the future in order to continue to deliver these benefits to consumers and citizens. The market alone cannot guarantee DTT's competitiveness, Ofcom needs to act too.
- Arqiva strongly believes that the only way in which this can be achieved is by reserving 600MHz spectrum for broadcast use, providing much needed additional spectrum to improve DTT's competitiveness by enhancing its customer proposition.
- Reserving this spectrum for broadcast would enable the DTT platform to continue its track record of technical and customer proposition innovation, underwriting its unique ability to deliver public policy objectives, value and benefits to UK consumers and citizens and UK plc.
- Arqiva recognises that, in the fullness of time, new platforms could develop which may be able to match DTT's unique characteristics. However this is unlikely to be the case over the next decade. The broad approach laid out above will therefore maximise the ability to maintain these outcomes whilst leaving open and creating options for the efficient use of spectrum in future.

Ofcom call for input

Developing a framework for the long term future of UHF spectrum bands IV and V.

Arqiva looks forward to engaging fully with Ofcom on these critical issues over the coming months to ensure they get the careful and considered assessment that they require.

Part A: Developing a framework for the long term future of UHF spectrum bands IV and V

Main Points

This section of Arqiva's response elaborates on the key points made in our Executive Summary. It also summarises Arqiva's specific observations against the criteria set out in the Call for Input.

Having invested more than £700m in the Digital Switchover process, secured against long term contract commitments – the length of which required by Ofcom - from the Multiplex Licence Operators, and with a significant and indispensable role in the provision of Terrestrial Broadcast Transmission services for the UK market. Arqiva is uniquely placed to comment on the significant and continuing contribution and success of the DTT platform. This success has been embraced by the citizen-consumer, enhancing the delivery of public policy objectives in broadcasting, creating a healthy competitive landscape for media delivery and creating substantial economic value.

- In less than 10 years DTT has become the most important TV platform in the UK. It is the largest by primary household (10M¹), even larger by total TV sets used (18.8M) and larger still by viewing (42% Total Television Viewing² with 50-60% of PSB viewing and up to 80% of commercial channel viewing occurring on DTT) Consumers have voted with their wallets to demonstrate the value and benefits that DTT delivers to them.
- DTT is the only universal Free-to-Air (FTA) platform – as such it is critical to fulfilling public policy goals with respect to broadcasting (which remains one of the UK government's most significant interventions, and is at the heart of Ofcom's statutory purposes) as it is the only platform which can deliver PSB output to every single TV set in the UK, and is thus an essential guarantor of the digital revolution in the UK. It remains one of Ofcom's most important policy tools and, as such, it should be considered central to the UK Government's digital strategy over the long term.
- DTT underpins the financial prospects of the UK's FTA PSBs. These broadcasters account for circa 90%^{3,4} of all spend on UK originated content and, as such, underpin the UK creative production sector – one of the most internationally competitive and successful in the world. Without a strong, robust, competitive DTT platform, the ability of the PSBs to sustain this comes under severe jeopardy. This in turn will accelerate the pressures already facing PSB – with significant citizen disbenefits as a result.

¹ Digital TV Update Q4 2010, Ofcom, April 2011.

² BARB/Attentional March 2011

³ PSB Content Origination Spend 2010, Mediatique, June 2011.

⁴ Second PSB Review, para 1.6, Ofcom, April 2008

- DTT has been central to the creation of a highly successful ‘horizontal market’ which is not, unlike the satellite and cable platforms, controlled by a dominant player. This has ensured the development of open and common standards for digital television resulting in healthy competition between consumer electronics companies and retailers. This in turn has ensured that consumers benefit from healthy price competition and growing choice and functionality whilst creating economic value in the sector.

DTT has been a genuine success story. But Arqiva also believes that Ofcom should use this process to consider the growing pressure that the platform is coming under:

- DTT is capacity constrained in comparison with competing platforms. This limits its ability to innovate over time and hence sustain a competitive consumer proposition – especially with respect to HD. This in turn will impact DTT’s ability to underpin investment in UK origination and PSB content.
- Despite its huge success, this capacity constraint is impacting DTT’s ability to compete with other platforms, most notably satellite. Predictions suggest that in the event that high mass market demand emerges for HD quality broadcasts, there is enhanced risk of consumer churn from DTT if scope for additional High Definition services is not afforded the platform. Platform competition has been a prime plank in Ofcom’s justification for intervening in the wholesale market for sports rights
- Reduced competition from DTT will result in disbenefits to consumers and citizens as a consequence of churn resulting in a reduction in and lower quality of UK content (with consequential loss of competitiveness of UK content across international markets – historically a real British success story), higher prices for pay TV content, fewer channels on offer to viewers and many TV sets that will no longer work without significant consumer investment in new reception equipment
- Increased uncertainty about the future longevity of the DTT platform risks creating a vicious circle with infrastructure providers needing to generate a return on their investment over a shorter time horizon resulting in increased costs to channel providers making the platform less attractive to them and potentially accelerating its decline and the adverse public policy outcomes described above.

DTT is the only platform that can deliver public policy broadcast objectives and outcomes to every single TV set in the UK free at the point of consumption. There is no current or foreseeable alternative broadcast platform which could fulfil this function.

Yet unlike for satellite and cable, for DTT Ofcom holds the key to providing the necessary certainty about the platform’s future, and its potential for development.

Arqiva believes that Ofcom has a unique opportunity to use its proposed UHF framework for spectrum in bands IV and V to facilitate the continued relevance of the DTT platform in order to ensure that the unique benefits it delivers are sustained;

- Whilst Bands IV/V can be used for alternative non-broadcast uses, (a) these uses are more effectively and efficiently delivered in other parts of the spectrum, (b) broadcast use cannot be effectively delivered from other parts of the spectrum and (c) the alternative uses are unproven (the lack of consumer take-up of mobile TV despite significant industry development is a case in point)
- The economic case for such alternative uses remains unproven whilst the value and benefits to citizens and consumers of broadcast television are indisputable. Other alternative uses are mainly associated with newer technologies / applications which are in an earlier stage of their life-cycle. Providers are large, International and generally very well funded and engaged in an intense battle to secure market share. where there are real competitive advantages in simply 'grabbing territory', if only to prevent competition securing it for a future, unproven use. This behaviour can lead to excessively high bidding for spectrum (as has happened in the past)
- A purely financial approach to spectrum auctions will not deliver on key public policy objectives around PSB, origination, platform competition, creativity, efficiency and meeting consumer / citizen needs. This runs counter to Ofcom's statutory duty to secure the optimal use for wireless telegraphy of the electro-magnetic spectrum whilst risking the accusation of Ofcom of acting on HM Treasury's behalf to maximise revenue for the UK Exchequer without due regard for the citizen-consumer.

Reserving 600MHz spectrum for broadcast use will maximise the ability to deliver key policy objectives in relation to broadcasting. It will also, at the same time allow Ofcom to maximise long term benefits from the use of spectrum.

- Spectrum policy with respect to Bands IV/V must provide the opportunity for DTT to sustain itself at least to a point in the future when there is one or more viable alternative broadcast solution to underpin the above policy objectives.
- By adopting this approach Ofcom would also provide Government with flexibility as for the optimal development of future spectrum policy. A successful medium term development of the DTT platform will permit full market adoption of more efficient DTT standards (MPEG4 / DVBT-2). This could enable much more efficient use of UHF spectrum potentially enhancing the flexibility of use of this spectrum over the longer term – providing further income to the Government in the form of auction proceeds or tax returns.

The above points contain the essence of Arqiva's high level response to Ofcom's call for input. However, we feel it important to emphasise the strategic nature of the issues being raised and the considerable analysis and discussion that would be needed before any final policy decisions could be taken. To this end, we welcome Ofcom's call for evidence as the initiation of a process that may take some years to conclude.

Below we highlight the key policy principles against which any future framework should be assessed:

- To ensure the continuity of DTT services to underpin the commitment made by the broadcasters, consumers and consumer equipment manufacturers to facilitate the Digital Switchover Process
- To ensure that existing investments made in the DTT platform are not compromised as a consequence of regulatory intervention
- To ensure that the future success of the platform is not compromised through insufficient spectrum being afforded it over a long enough period to allow the platform to develop and innovate in line with consumer demand
- To recognise the inherent link between DTT, Public Service provision, universal access and sustaining high quality UK content origination and how can this be maintained over the long term
- To acknowledge the important role that DTT plays in ensuring Broadcast platform competition and that a strong and developing DTT service offering is key to a sustainable competitive environment (as for instance in the recent introduction of High Definition which serves as a good example of the platform moving with the market with Ofcom's assistance to achieve significant consumer benefit)

Arqiva's specific observations against the criteria set-out in the request for information are summarised below;

- **Demand and supply of services based on UHF bands IV and V**

As already highlighted above DTT is a huge success story, becoming the most important television platform in the UK in less than 10 years, making best use of UHF spectrum that is ideally suited to the delivery of wide area coverage solutions for the broadcast delivery of content. There has been clear consumer / citizen benefit gained through its rapid and widespread adoption, with consumers embracing multi-channel television free at the point of consumption. Against this background it is worth considering the range of potential alternative current or future services for this spectrum. These uses fall into two categories, (a) complementary technologies to DTT, and (b) substitutional technologies to DTT. The complementary services are Programme Making & Special Events (PMSE), Local TV and White Space Services.

PMSE, Local TV and White Space services are a natural consequence of the availability of interleaved spectrum generated as a result of the deployment of high power terrestrial broadcast networks with the PMSE sector heavily utilising interleaved spectrum particularly in the West End to deliver significant economic value through live events and shows.

- Local TV is a medium-high power use of the spectrum which benefits from the wide area coverage characteristics of this spectrum and more importantly the scale of the embedded device base, both set top boxes and iDTVs. Furthermore, Local TV represents a service that has been extensively adopted by the consumer in Spain and Italy.

- The case for white space services is unproven but there is a significant interest from the Consumer Electronics and IT industries. More critically the European Parliament sees great potential in this approach and hence any policy decisions made at this point should not prejudice future White Space developments.

The potential substitutional uses are Wireless Broadband and Public Safety. The need / consumer-citizen demand for these technologies in this spectrum is unproven and in addition the high capacity throughput services that may be needed are more effectively delivered in other spectrum (above 1GHz) - running the risk of inefficient spectrum use.

Broadcasting, on the other hand, has no alternative spectrum options and whilst to date DTT has been a great success from a consumer perspective the platform's ability to develop its service offering and innovate over the long term is severely hampered by capacity constraints directly linked to spectrum availability. We believe that inclusion of the 600MHz spectrum band for broadcast use in addition to the allocated spectrum in UHF bands IV and V is fundamental to the future of the platform. With the roll out of HD services to PSB 3 and recent launches by Sky of 3DTV, the diversity of consumer experience, and therefore expectation is expanding and without appropriate spectrum to allow the DTT platform to extend its service offering we are concerned that the platform will be devalued over time and lose its relevance to the consumer and to service providers, ultimately damaging the level of competition in the market. Research undertaken by Freeview and Arqiva separately has demonstrated the potential importance of High Definition services to the platform and whilst we commend Ofcom for facilitating HD onto the platform we believe that a broader range of HD content will be demanded by the consumer over time. It is worth noting that the Swedish regulator recently completed a beauty contest for capacity on two new national multiplexes to add to the existing five. Out of a total of 40 applicants 20 were for HD services. The two new multiplexes that have subsequently launched offer only High Definition services both Free-to-Air (FTA) and Pay. In summary, sustained demand for DTT services within UHF bands IV and V is anticipated over the long term with the 600MHz spectrum being key to platform innovation and development to sustain competition and diversity of consumer choice.

- **Technological developments**

Broadcast technology development has been recently focused on transmission and encoding standards, i.e. MPEG4 and DVB-T2. These developments made possible the 2010 launch of High Definition services on DTT, which will be available universally on completion of the Digital Switchover process. With completion of the national roll-out of high definition services in 2013 we are anticipating a relatively rapid uptake of MPEG4 DVB-T2 enabled devices as High Definition services are embraced by the consumer. Furthermore, Arqiva believes that enhancements such as MPEG4 and DVB-T2 offer the platform the potential to innovate and develop its service offering over time but only in conjunction with the appropriate spectrum strategy to enable a broader adoption of new standards. Key to this is the role that

the 600MHz spectrum has in combination with other UHF spectrum in bands IV and V, in facilitating an enhanced consumer experience whilst ensuring the most efficient spectrum outcome and not compromising the universality and public purpose of the service. Arqiva encourages Ofcom to explore these aspects in developing the long term framework for UHF bands IV and V.

Whilst considerable emphasis has been placed by the equipment vendors and mobile operators on the theoretical maximum throughput of services based on the LTE and 3GPP standards under development it is worth highlighting that the lower frequencies in UHF bands IV and V are less well suited to the delivery of high bandwidth services and even more important **NOT** capable of delivering broadcast type services to large screens for mass audiences when combined with advanced wireless broadband standards such as LTE.

Furthermore, high bandwidth mobile networks are typically only deployed on economic grounds, i.e. where population density supports network deployment on commercial grounds, and as a result services have not historically been universal in coverage, and have never been free at the point of consumption. We urge Ofcom to consider very carefully the policy implications of future spectrum decisions that compromise the universality principle of Public Service access to content particularly in light of Government and European Parliament initiatives to remove the Digital Divide.

- **International Considerations**

It is important to note that UHF bands IV and V are currently internationally co-ordinated and are either deployed, or are in the process of being deployed for Digital Terrestrial Television services across Europe. Furthermore, with digital switchover progress in Eastern Europe proving slower than anticipated the liberation of 800MHz spectrum on a Europe wide basis may be delayed. Arqiva believes that spectrum related decisions such as International harmonisation gain greatly from the true scale gained by co-ordinated service deployment as evidenced by the success of DTT. To this end we encourage Ofcom to take into account the potential timing of co-ordinated international service introduction as a key reference point in terms of future spectrum use evaluations and the development of the framework for UHF bands IV and V

With any meaningful scale of wireless broadband service deployment within 800MHz spectrum being unlikely before 2015 it is very difficult at this stage to be clear whether additional UHF spectrum at 700MHz would be justified for more wireless broadband services. To this end and in keeping with developments associated with the Radio Spectrum Policy Programme we encourage Ofcom to consider a broader pool of spectrum assets when examining spectrum requirements for future wireless broadband services as spectrum within UHF bands IV and V may be far from ideal for future usage scenarios.

Finally, we encourage Ofcom with the support of industry to take an active role in the process of international negotiations as they proceed to ensure the optimum outcome for the UK's Broadcast industry.

- **Benefits to citizens and consumers**

The DTT platform has become the primary source of multi-channel television consumption for UK households. The platform has been embraced positively by the consumer as the viewing experience has been enhanced through the introduction of greater choice. Crucial to this success has been the billions of pounds invested by the Broadcast Industry and more importantly the consumer in facilitating the Digital Switchover process, which in turn will enable the Government to benefit from the release of Digital Dividend spectrum at 800MHz for wireless broadband services. The link between Public Service and DTT has been fundamental to its success with the industry working in harmony to make a success out of the horizontal market and Arqiva believes that this model remains fundamental to the future success of the platform. The high level of investment by the PSBs in UK originated content is underpinned by the proportion of viewing hours and penetration afforded by DTT. Moreover, DTT is the only platform that bridges the 'Digital Divide' where the consumer has learnt to trust the reliability and quality of the service offered and this is endorsed by the high primary set adoption rates of DTT in the UK regions at switchover.

The competitive landscape is being enhanced through the roll out of DSO and the universal provision of DTT to the consumer. This accrues from DTT in three ways

- FTA provision of high value widely consumed content acts as a restraint on the cost of TV to the consumer,
- DTT offers the only alternative digital TV platform to DSAT for the last circa 40% of households (non broadband / cable households), and
- In all cases it is the only service free of installation costs for secondary and tertiary sets for all households.

However, once DSO is complete the DTT platform's ability to innovate, develop and ultimately deliver an enhanced consumer experience will be constrained by its limited access to spectrum, both to launch new multiplexes and to enable a transition of existing multiplexes from DVB-T to -T2. If, as has been suggested above, High Definition becomes a mainstream consumer requirement then there is every likelihood that the platform will suffer over the long term and that competition will be diminished unless 600MHz spectrum is made available so that the platform can keep pace with consumer demand

- **Future timescales**

The timing and process of International spectrum co-ordination is a key factor when considering alternative uses of UHF bands IV and V. There are initiatives underway for IMT based systems to have co-primary use of currently DTT co-ordinated spectrum as an agenda item onto the WRC15/16 agenda. If successful, this would mark the formal initiation of proceedings and will be of great significance for this spectrum. The international process for co-ordination may lead to an international agreement at WRC20/21 with subsequent clearance / re-farming (if relevant) potentially programmed from 2022/23 onwards. We therefore see the international

agenda and timing as crucial to the long term usage of spectrum in UHF bands IV and V and we encourage Ofcom to play an active role to ensure that UK DTT is afforded the appropriate amount of spectrum over the long term to allow it to remain competitive

In addition, Arqiva emphasises that long term certainty over spectrum rights is key to platform stability. Given, that since any meaningful deployment of wireless broadband services of scale in 800MHz spectrum is unlikely to be achieved before 2015 there seems merit in national / Europe wide appraisal of the demand for UHF bands IV and V for the deployment of further wireless broadband services as part of a wider audit of spectrum rights as proposed in the latest drafting of the Radio Spectrum Policy Programme.

In summary, Arqiva is committed to the long term success of the DTT platform and is keen to work closely with Ofcom, Broadcasters, Multiplex Licence Operators, consumer equipment manufacturers and other stakeholders to enhance the DTT platform over time. To this end we believe that the future success of the Digital Terrestrial Television platform is critically dependent on achieving access to additional spectrum within UHF bands IV and V to complement existing services and allow the platform to grow and remain competitive.

Only a robust regulatory framework from Ofcom, underpinned by clear and explicit policy goals about long term support for DTT, will be able to give industry the confidence to invest, and consumers and citizens confidence in long term delivery of cherished and important public services. Arqiva is keen to work with Ofcom and industry to develop the appropriate framework for UHF bands IV and V to ensure that the long term success of the platform is secured rather than compromised.

Co-ordination

Arqiva notes that Ofcom's call for input sits alongside the Government's invitation for input to its own considerations about the future statutory and regulatory framework for the communications industries. The Government has specifically invited views on the most appropriate ways for spectrum to be managed in future, as well as observations on how best the UK's communications sector can be freed up to innovate and drive economic growth.

Arqiva shares with both Ofcom and the Government the clear understanding that the optimum use of spectrum is one which will balance both economic and public policy goals. In that context, we therefore trust that the different processes being run by both Government and Ofcom will nevertheless be kept closely aligned.