

Brussels 2015-01-12

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Response to the consultation on the “Draft RSPG Opinion on Common Policy Objectives for WRC-15”.

Dear Sirs,

Please find enclosed a response to the consultation on the Draft RSPG Opinion on Common Policy Objectives for WRC-15 from Broadcast Networks Europe (BNE)¹.

Yours sincerely



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¹ [BNE](http://www.broadcast-networks.eu) is a trade organization for Terrestrial Broadcast Network Operators for Radio and TV in Europe based in Brussels. The 16 BNE members are operating in 19 European countries. Members are Abertis (Spain), Arqiva (UK), České Radiokomunikace (Czech Republic), Digea (Greece), Digita (Finland), ETV (Serbia), Elettronica Industriale (Italy), Norkring (Norway), Oiv (Croatia), ORS (Austria), Swisscom Broadcast (Switzerland), Radiocom (Romania), Rai Way (Italy), 2RN (Ireland), TDF (France) and Teracom (Sweden). In addition Terrestrial Network Operators in Belgium, Denmark and Monaco are represented by their respective parent (and BNE member) company. For further info see www.broadcast-networks.eu

Response to the consultation on the “Draft RSPG Opinion on Common Policy Objectives for WRC-15”.

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1. Executive summary.

BNE has taken an active part in the definition of the long term strategy for the future use of the UHF band to ensure that the future of the Digital Terrestrial Television (DTT) platform and its importance to European consumers and the audiovisual sector were taken into account.

In view of the upcoming WRC 2015, BNE will continue to contribute actively to the policy debate on the future use of the UHF Band, and will seek to ensure that policy decisions maintain ease of access and plurality of content consumption for European citizens and sustain the dynamic and highly competitive market for audio-visual content creation and supply.

Considering the important role that terrestrial broadcasting already performs in the EU, BNE notes that any process to develop the long term strategy of the UHF band on which DTT depends should have DTT at its core.

BNE supports the no mobile allocation to the 470-694 MHz frequency range and welcomes the position adopted with regard to the long term sustainability of DTT, specifically the recommendation that the frequency band 470-694 MHz shall remain available for DTT in the foreseeable future, i.e. beyond 2030.

Whilst BNE acknowledges the growing International momentum behind the future displacement of DTT services from the 700 MHz band, we continue to question the relevance, especially in the short to medium term, of this frequency band in Europe to support growth in wireless broadband services. In particular, BNE and other Industry Stakeholders continue to challenge mobile broadband spectrum forecasts. In particular emphasising the need for them to be recalibrated, based on proper estimation methods and unbiased analysis of traffic density, market sizing and technology improvements such as wi-fi offloading, mobile network configuration and compression.

BNE strongly endorses the establishment of a transition roadmap in line with the proposals in the Lamy report and implementation measures limiting the negative impact on consumers and current DTT spectrum users, who should be protected from any future displacement of DTT.

Finally, BNE emphasises the complementarity between DTT and mobile broadband networks as the right approach, when compared to a hypothetical convergence of networks and services. In BNE's view, it is now time to focus future activities on coexistence / cooperation, rather than convergence. In summary:

- On Agenda Item 1.1, BNE welcomes the recommendation to support no mobile allocation in the 470-694 MHz band.
- Against Agenda Item 1.2, BNE considers it essential that the harmonised technical conditions of the 700MHz band and the rules of the cross border coordination shall ensure the protection of the terrestrial broadcasting services below 694MHz.
- For Agenda Item 1.3, BNE endorses support from Member States to a revision of WRC-Resolution 646 providing relevant information on regional PPDR frequency ranges and welcomes the RSPG position that harmonised and dedicated spectrum is not required in Europe for PPDR purposes.

2 Comments on the Draft RSPG Opinion.

2.1 Comments to the elements for a common policy objective on the Agenda Item 1.1.

- On Agenda Item 1.1, BNE welcomes the recommendation to support no mobile allocation in the 470-694 MHz band.

- **DTT needs the 470 – 694MHz band.**

BNE endorses the recent recommendations from a range of high profile and independent bodies (RSPG, HLG, CEPT, Ofcom...) that the frequency band 470-694 MHz shall remain available for DTT for the foreseeable future, at least until 2030, in order to provide certainty for investments by consumers and by operators and users of the broadcasting infrastructure. This will be of particular importance in the event that the 700 MHz band will be utilized for mobile broadband and where receiver upgrades, and, re-coordination and redesign of the broadcasting networks will become necessary.

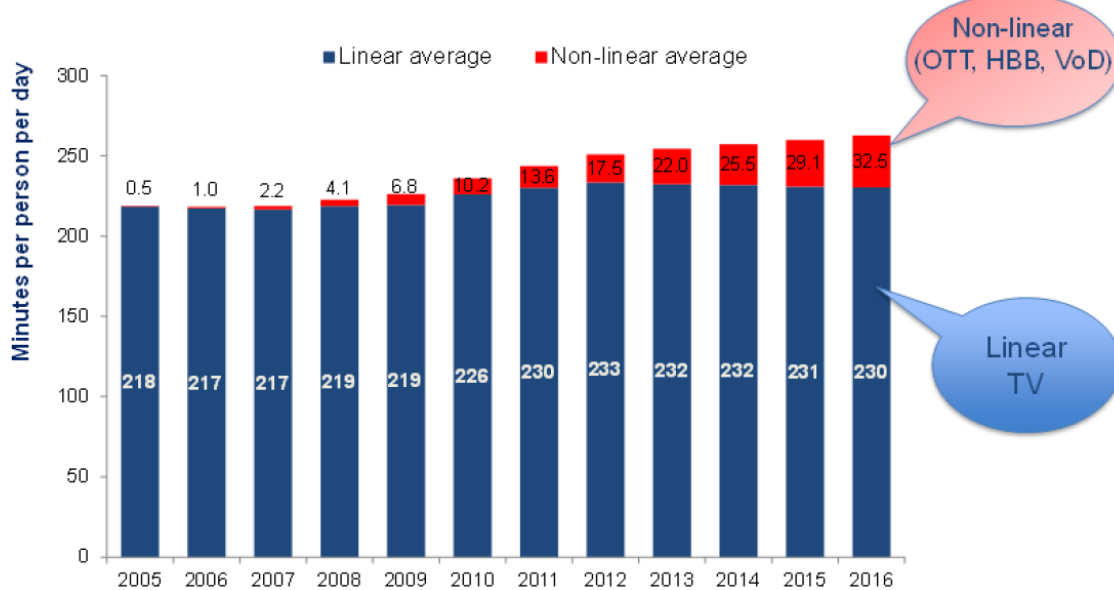
Terrestrial networks maintain a strong position and are likely to do so for the foreseeable future as willingness by households to change technology is usually a much slower process than forecasters have predicted. This is underpinned by new and attractive services being introduced on the DTT platform (Pay-TV/VOD, HD and 3D). Our conclusion is that DTT will remain an extensively used and key distribution platform for broadcast TV and will play an important role in European content production, freedom of expression and information provision.

In addition, taking into account a rational and un-biased analysis, linear content will continue to be the most attractive form of audio-visual content consumption delivering many ours of entertainment to European consumers, as outline by Pascal Lamy in his report²:

- **Linear TV** viewing over different delivery platforms (mix is country specific), on large TV screens, will remain at the present high level in the foreseeable future (today around 4 h/day and person, 87 % of population every day).
- As a complement, **non-linear TV**, including recorded (PVR) and on-demand TV viewing (including time shifted) is increasing fast but is still much smaller (today about 10% of viewing on large TV set screens). It is important to note that user demand for non-linear television is often triggered by linear TV.

² Report on the results of the work of the High Level Group on the future use of the UHF band (<https://ec.europa.eu/digital-agenda/en/news/report-results-work-high-level-group-future-use-uhf-band>)

Evolution of linear and nonlinear viewing on the large TV screen in major EU markets (Germany, France, Italy, Spain, UK)



Source: IHS – ScreenDigest: Cross-platform Television Viewing Time FY 2012

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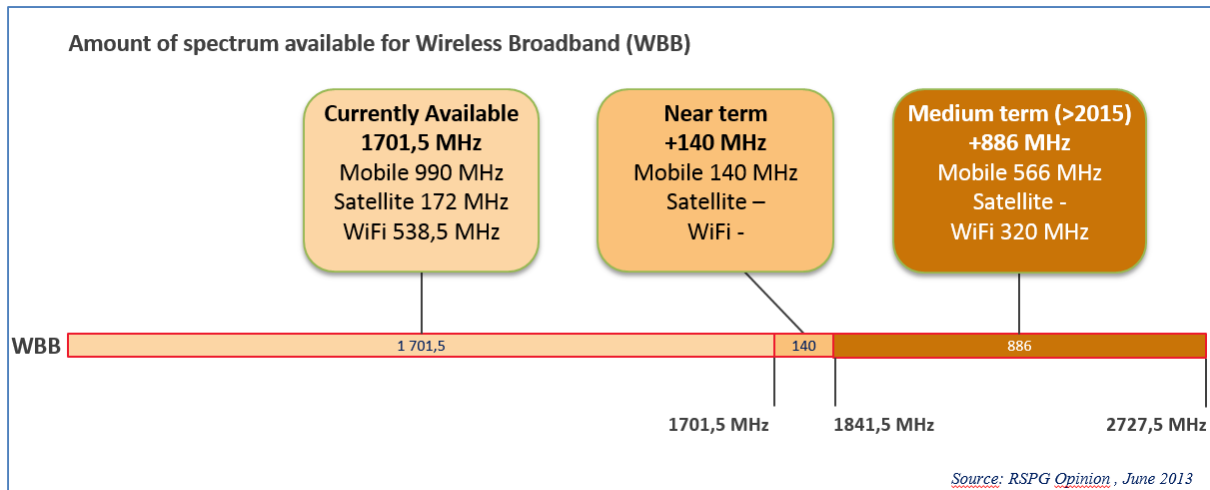
DTT is not the only user of spectrum in the 470–694MHz range:

- The Programme Makers and Special Events (PMSE) community use this spectrum for applications such as radio microphones, talkback, in-ear monitors and other audio links, which are a critical element of television content production, theatre productions, outside broadcasts, and major concerts and sporting events. Today, devices are only available for these applications in 470–694MHz. Therefore, if this spectrum was awarded to mobile, there is currently no alternative solution available.
- White Space Devices (WSD) proponents, a new application that could provide a range of potential services, are preparing to use this spectrum.
- The radio astronomy community uses this spectrum for the study of celestial objects at radio frequencies,
- Aeronautical radionavigation services are in operation in portions of the frequency band 645-790 MHz.
- Wind profiler radars (radiolocation service) are in operation on a secondary basis in the band 470-494 MHz in some European countries

Finally, BNE notes that an extensive breadth of sharing / compatibility studies have been undertaken since WRC-12 for the 470 – 694 MHz frequency range. These studies confirm that co-existence between IMT and broadcasting services is not possible and hence that this frequency range should not be subject to further review – particularly in light of the proposed position for this frequency range for Agenda Item 1.1 and the need for long term protection and security of to this frequency range for terrestrial broadcast services.

- **Wireless Broadband has access to plenty of spectrum.**

Regarding the “RSPG13-521 opinion on STRATEGIC CHALLENGES FACING EUROPE IN ADDRESSING THE GROWING SPECTRUM DEMAND FOR WIRELESS BROADBAND”, wireless broadband (WBB) will gain access to a huge amount of spectrum as illustrated below:



- 1701.5MHz is currently available for Wireless Broadband
- 140 MHz additional spectrum will be / is allocated in the near term.
- 886 MHz additional spectrum will be allocated in the medium term.

This additional spectrum is / will be allocated on the basis of existing mobile data traffic forecasts. However, mobile data demand forecasts are inherently uncertain and caution should be exercised when taking regulatory action which relies upon them. This is particularly the case where the acknowledged leader in the field of mobile data demand forecasts, Cisco, has twice reduced its mobile data forecasts. The adjusted estimates were subsequently challenged by other recognised authorities in this field, i.e. Analysys Mason, LS Telecom and OFCOM, as still significantly overstating the likely level of future data demand.

Furthermore, the mobile data traffic forecasts are subject to ongoing challenge and hence mobile broadband spectrum requirements are also subject to challenge. According to different independent reports issued by consultancies and organisations, there is a significant risk for the ITU to base future spectrum demands for Mobile Broadband on input assumptions and market projections that are questionable. Two examples are given below:

- [European Broadcasting Union \(EBU\)](#): “Report ITU-R M.2290 is the key document on which mobile spectrum requirements are based. This Report has been published in order to substantiate the request of the mobile industry for additional spectrum for IMT. However, it has been shown here that this Report is flawed, both with respect to the input assumptions for calculating the spectrum requirements, and the mathematical approach used for the prediction of data traffic evolution. As such, the conclusions taken in this Report are wrong and should not be relied upon in the current debate about spectrum requirements of IMT systems.

Furthermore, the traffic predictions have been made without taking account of economic aspects or market developments that will have significant impact on the actual demand and, consequently, the spectrum requirements. These factors may well prove to be decisive in determining the future evolution of mobile data traffic”.

- **LS Telcom:** *“We have identified that there is a fundamental problem with the ITU model in that the traffic density does not appear to have been benchmarked against total predicted traffic in any particular country. Having undertaken such an analysis, our conclusion is that the traffic densities which drive the ITU’s spectrum demand forecasts are at least two orders of magnitude (i.e. a factor of 100 times) too high when compared with those which would be expected in any developed or developing country in a 2020 timeframe”.*

There is clearly growing evidence that mobile data demand forecasts are significantly overstated. Furthermore, the basis for the data growth estimates for mobile have been questioned by some industry sectors with the claim that base assumption regarding population density are two orders of magnitude too high. If this claim is substantiated the high data capacity growth projections for mobile will have to be significantly downgraded and regulatory policy adjusted accordingly.

In our view, in addition to the need for more realistic forecasts, there are further aspects to be taken into account when assigning additional spectrum to IMT services:

- **Refarming:** the current mobile services still include mobile “narrowband” technologies GSM or 2G. The spectrum allocated to these technologies should be reallocated to more efficient technologies in order to improve the current use of the spectrum.
- **Efficient roll out:** the expansion of the use of small / pico / femto cells and network densification of the Mobile Networks to increase data capacity is better addressed by access to higher frequency spectrum whether the user equipment is static or mobile.
- **Wi-Fi offloading:** has been recognised as a significant access solution for ‘mobile’ data consumption, which is typically static and facilitated by traffic offload on to Wi-Fi³. Wi-Fi plays an important role (around 80% of traffic to mobile devices is connected to Wi-Fi access points), this role is expected to grow and there is intention to release additional spectrum to the Wi-Fi service.
- **Rural coverage:** low frequency spectrum is considered important for rural broadband services, but in the current Mobile Operator deployments of the 800MHz band are not seeking to exploit this opportunity due to the lack of commercial benefit of Mobile Broadband network roll out to rural areas. If this is the case at 800 MHz, then, surely it will be the case at 700 MHz and hence the full benefit of the low frequency spectrum will not be realised without Regulatory intervention.

It is also worth noting that a recent report published by Aetha on the future use of the 470–694MHz band concluded that there was no economic case for switching-off existing DTT networks across Europe on the grounds of spectral efficiency as even with the most aggressive mobile traffic forecast, the costs of clearing DTT from the spectrum significantly outweighed the potential value of using the spectrum for mobile by a factor of almost four (see section Appendix 2. Aetha study on “Future use of 470-694MHz”). Further, the study also concludes the introduction of a co-primary allocation to mobile at WRC15 would have considerable negative impacts on DTT. Given the history of DTT spectrum being awarded co-primary status for mobile and that then leading to the spectrum being cleared for mobile, granting a co-

³ 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/>

primary allocation to mobile in the 470–694MHz band would undermine both consumer and investor confidence in the future of the platform. This would lead to the DTT platform falling behind other television platforms and even unnecessarily risk its viability, with little benefit to be derived, as such a Regulatory Intervention would result in Market Failure.

- In conclusion, BNE calls for Mobile Broadband spectrum forecasts to be recalibrated, based on proper estimation methods and unbiased analysis of traffic density, market sizing and the impact of technology improvements such as Wi-Fi offloading, mobile network configuration and compression.

2.2 Comments to the elements for a common policy objective on the Agenda Item 1.2

- Against Agenda Item 1.2, BNE considers it essential that the harmonised technical conditions of the 700MHz band and the rules of the cross border coordination must ensure the protection of the terrestrial broadcasting services below 694MHz.

The harmonised technical conditions defined by the WRC-15 must ensure the absence of interferences on channel 48 and below. However, if disruption is caused to the terrestrial broadcast service it should be the responsibility of the source of the disruption to fully address and resolve on the basis of the well-established 'polluter pays principle'.

It is important to take into account that the detailed technical analysis on which the harmonised technical conditions are based have assumed that the Broadcast service is utilising the DVB-T2 standard. In the event that DVB-T systems are still in place post 700 MHz clearance, there is a heightened risk of disruption to DTT networks and additional local interference mitigation arrangements may be necessary. Whilst it is also worth noting the need for improvements to receiver specifications to minimise disruption to DTT services in the event that IMT services are deployed in the 700 MHz band.

In addition, the channel plan under development should offer maximum flexibility for member states to utilise the duplex gap, in particular because the terrestrial broadcast service will remain a primary service in the 700 MHz band then the Duplex Gap could be used to deliver DTT services where appropriate and subject to National requirements.

Joint or shared use of frequencies is already a well-established and successful practice between DTT and wireless production equipment such as wireless microphones (PMSE) in the UHF band. Many studies have been undertaken within the framework of the ITU that show coexistence of mobile broadband (LTE) and DTT/PMSE on shared frequencies is not practical. Some possibilities for coexistence between DTT and White Space Devices (WSD) are under consideration and may enable a potentially high value complementary use of the spectrum alongside the existing uses.

Furthermore, based on the detailed analysis undertaken and the harmonised technical conditions defined for the 700 MHz band there is no scope for Public Protection and Disaster Relief (PPDR) services based on IMT technology to be accommodated within the 9 MHz guard band adjacent to Channel 48.

2.3 Comments to the elements for a common policy objective on the Agenda Item 1.3.

- For Agenda Item 1.3, BNE endorses support from Member States to a revision of WRC-Resolution 646 providing relevant information on regional PPDR frequency ranges and welcomes the RSPG position that harmonised and dedicated spectrum is not required in Europe for PPDR purposes.

The security and emergency systems requirements vary to a significant extent from country to country. This perspective is endorsed by Ofcom⁴ in their recent WRC-15 update where they note;

‘4.37 We will maintain the position of supporting national flexibility in order to enable PPDR agencies to choose the most appropriate solution to suit their national needs. We will oppose any solution which seeks to identify dedicated bands for emergency services use. ‘

It is important to take into account that National and sub-national Administrations have diverse requirements for PPDR services and hence there does not appear to be a compelling need for dedicated and harmonised spectrum.

In addition, BNE emphasises the importance of the Broadcast services in offering emergency information which needs to be recognised.

⁴ Ofcom Update on the UK preparations for the World Radiocommunication Conference 2015 (WRC-15), published 6 January 2015, http://stakeholders.ofcom.org.uk/binaries/consultations/wrc15/Update_on_WRC-15.pdf

2.4 Comments to the elements for a common policy objective on the Agenda Item 1.10.

- BNE endorses the support from Member States for a future Agenda item addressing the spectrum needs for the fifth generation of mobile networks (commonly known as 5G) with the focus above 6 GHz.

The fifth generation of mobile networks (5G) will not only be mobile but rather a technology that is intended to offer a wide range of capability that would be applicable in both the fixed and mobile contexts. In this context, it seems reasonable to assume that 5G service deployment will be largely based on heterogeneous networks (including dense / high dense networks, multiple technologies and sharing spectrum solutions).

Audiovisual content is one of the main drivers of traffic growth on IP networks and the increasing demand for higher resolution formats, e.g. High Definition, Ultra High Definition and the significant role that linear viewing will maintain implies that broadcast and multicast technologies will be needed. Then due consideration should be given to future spectrum requirements for the terrestrial broadcasting service, the spectrum inventory work undertaken by the European Commission highlights this anticipated demand for spectrum.

BNE agrees with the focus of this agenda item 'above 6 GHz' and it is worth emphasising that on the basis of the extensive range of sharing / compatibility studies that have been undertaken for the 470 – 694 MHz frequency range that co-existence between IMT and broadcasting services is not practical in this band. Hence this frequency range should not be subject to further review post WRC15 – particularly in light of the proposed position for Agenda Item 1.1 and the need for long term protection for terrestrial broadcast services, in order to allow future evolution of the terrestrial broadcasting service.

All assumptions that lead to 5G spectrum requirements should be realistic, transparent and justified. This would enable industry to target investments in the appropriate technology, and at the right time.

3 Appendix 1. The importance of DTT.

Spectrum management is a central issue intimately tied to the provision of terrestrial television and radio broadcasting, the capacity of citizens to participate in the public discourse, the breadth of consumer choice and the preservation of local identity. Over half of European households – 250M European viewers – choose television via digital terrestrial television (DTT) as their preferred means of media consumption. Low cost, accessible, local, reliable, regulated, plural - digital terrestrial television is incontestably the preferred choice of Europeans and an economically rationale means of delivering AV works in Europe over the long term. Moving away from DTT would result in a loss of €38 billion to the EU economy⁵. Similarly, 80% of the EU population listens to the radio for 2 to 3 hours a day, mostly through broadcasting (analogue and digital).

Linear television continues to be the most efficient means to address the reality of national and local identities and upholds Europe's unique audio-visual model. This model is comprehensive and virtuous. Without it Europe would likely face a consolidation of production in only a few cities, to the detriment of a very high number of citizens.

Terrestrial networks are, in most EU countries the only platform where free-to-air public service channels are broadcast unencrypted and without subscriptions and hence have a unique and central role in bridging the Digital Divide.

DTT networks and Europe's broadcasting ecosystem are a key pillar of the European cultural, creative and media industries and these are an essential pillar of the digital economy and one of the key assets of Europe, in every dimension:

- Accounting for 6.8% share of GDP (€860 billion) and 6.5% of Europe's employment (approximately 14 million direct and indirect jobs), according to the TERA report⁶;
- Creating and investing in digital platforms, Europe's digital market for cultural products and services are providing more and more choice to consumers despite enduring a huge and unfair competitive pressure from illegal or unregulated services that destroy jobs and investment opportunities;
- Combining the forces of large and successful European-based companies competing in a global market alongside +1.4 million small and medium sized enterprises⁷ (responsible for over 80% of generated revenue) which tie together European territories and are deeply rooted within local economies and national cultures. They employ a highly skilled, non off-shorable and well-educated workforce;
- Including small, medium and large entities - employers and workers - that jointly constitute the flagship and the backbone of creative industries in Europe. Together they stand at the forefront of Europe's fresh start to provide more jobs for European citizens.

⁵ AETHA study, http://www.aethaconsulting.com/articles/report_econbenefits470694mhz.php

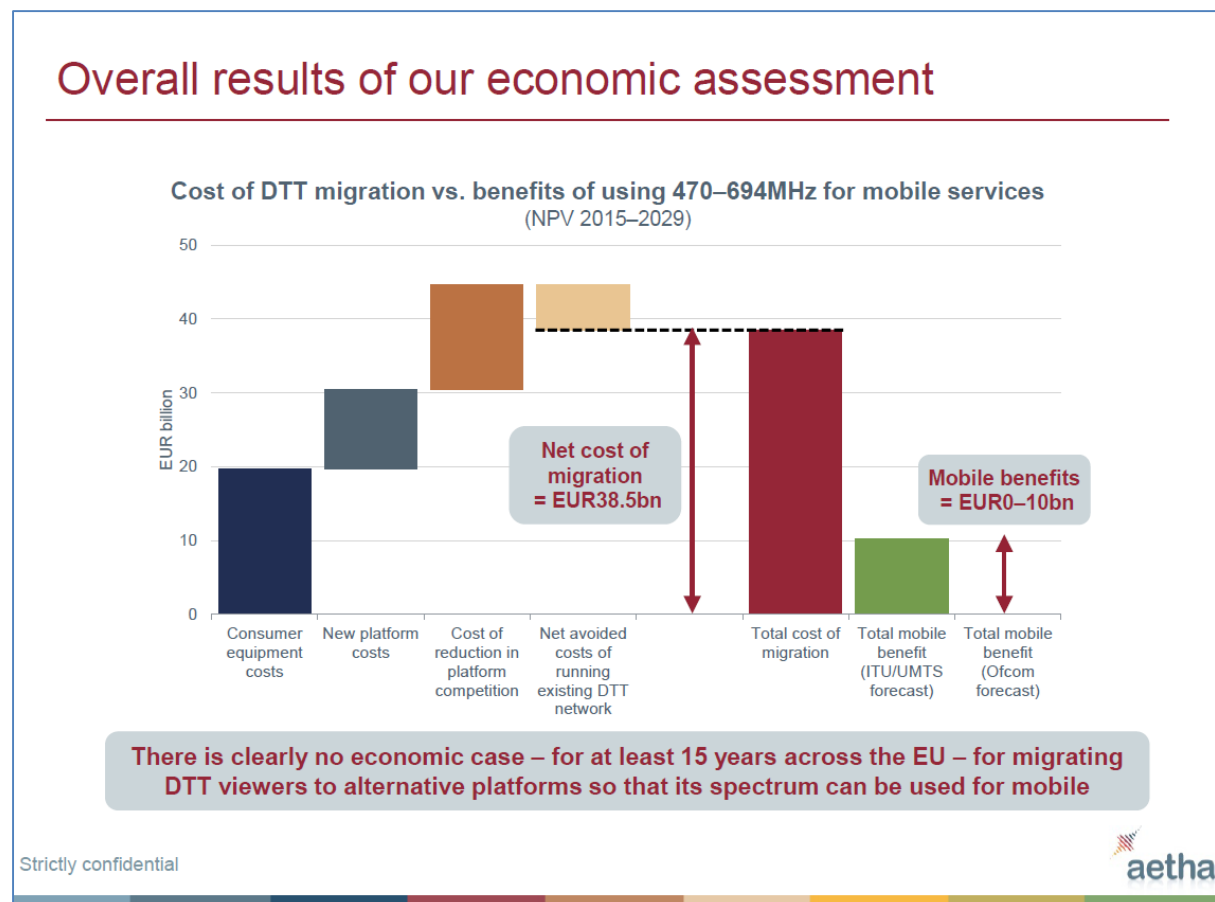
⁶ Laurent Benzoni and Philippe Hardouin, The economic contribution of the creative industries to EU GDP and employment - Evolution 2008-2011, Paris, September 2014

⁷ sic

4 Appendix 2. Aetha study on “Future use of 470-694MHz”.

The Aetha study considers a scenario in which DTT transmissions cease and consumers are required to migrate to alternative platforms (a mixture of satellite, cable and IPTV). All 224MHz of spectrum in the band then becomes available for mobile services.

The study calculates the costs and benefits of this scenario over a 15year period (2015 to 2029) and compares them to the costs and benefits of continued use of the spectrum for DTT and other existing uses (PMSE, radio astronomy and ‘white spaces’). The benefits from making spectrum available for mobile are highly sensitive to forecast traffic levels. Therefore, the study considers a range of traffic forecasts, the highest of which is based on forecasts from the ITU and UMTS Forum.



The results of the report show that even in the most aggressive mobile traffic forecast, the costs of clearing DTT from the spectrum (EUR38.5bn) significantly outweigh the potential value of using the spectrum for mobile (EUR10.3bn) by a factor of almost four. When a less aggressive traffic forecast is used, the costs of clearing DTT are unchanged but the value of using the spectrum for mobile would be near to zero.

As the study describes, it is clear that the economic benefits for the EU are maximised if the 470–694MHz band continues to be used for DTT for at least the next 15 years – there is clearly no economic case for switching-off existing DTT networks across Europe on the grounds of spectral efficiency.

Further, the introduction of a co-primary allocation to mobile at WRC15 would have considerable negative impacts on DTT. Given the history of DTT spectrum being awarded co-

primary status for mobile and that then leading to the spectrum being cleared for mobile, granting a co-primary allocation to mobile in the 470–694MHz band would undermine investor confidence in the future of the platform. This would lead to the DTT platform falling behind other television platforms and even unnecessarily risk its viability, with little benefit to be derived.