

INTERNATIONAL TELECOMMUNICATION UNION

PLENARY MEETING

Document -E
xxx 2015
Original: English

BNE, CBU, ABU, ASBU, AUB, EBU, NABA, IAB

**SUPPORT TO THE NOC POSITION ADOPTED BY SEVERAL REGIONAL
ORGANIZATIONS FOR THE FREQUENCY RANGE 470-694/698MHZ**

Agenda item 1.1

Background

Within the scope of Agenda Item 1.1, the Conference will consider additional spectrum bands for mobile broadband services. One of the candidate bands is 470–694/698 MHz, which is currently used and after the clearance of the 700 MHz band will be the only UHF spectrum available for terrestrial television.

All but one of the Regional Organizations have made proposals to WRC-15 for “No Change” to this frequency band¹. More than 630 broadcasting organisations from all over the world endorse this position for the reasons summarised below.

The broadcasting organisations signing this document are:

- [Asia-Pacific Broadcasting Union \(ABU\)](#) representing 275 broadcasting organizations
- [Arab States Broadcasting Union \(ASBU\)](#) representing 60 broadcasting organizations
- [The African Union of Broadcasting \(AUB\)](#) representing 48 broadcasting organizations
- [Caribbean Broadcasting Union \(CBU\)](#) representing 33 broadcasting organizations
- [European Broadcasting Union \(EBU\)](#) representing 73 broadcasting organizations
- [International Association of Broadcasting \(IAB\)](#) representing 111 broadcasting organizations
- [North American Broadcasters Association \(NABA\)](#) representing 31 broadcasting organizations
- [Broadcast Networks Europe \(BNE\)](#) representing 21 Terrestrial Broadcast Network Operators in Europe.

¹ RCC: [Addendum 1 to Document 8](#)
CEPT: [Addendum 3 to Document 9 \(Add 1\)](#)
ASMG: [Addendum 1 to Document 25 \(Add 1\)](#)
ATU: [Addendum 1 to Document 28](#)
APT: [Addendum 1 to Document 32](#)

The Role of Digital Terrestrial Television – The Case for ‘NO CHANGE’

Digital Terrestrial Television (DTT) is the most widely-used broadcasting platform for television viewing. DTT has become the central pillar of the cultural and creative sector, having a great impact both in terms of economy (GDP) and employment.

The free-to-air television model gives viewers subscription-free access to public service content and commercial/private channels. This promotes the widespread availability of content and hence investment in content creation. Free-to-air TV is a prime means for disseminating information and education. Free-to-air TV preserves and encourages Freedom of expression and Information, which underpins social cohesion, and ensures that news, major events and a diversity of general entertainment are available to all in society.

The extensive studies undertaken and summarised in Appendix 1 emphasise that there is no need to allocate the 470 – 694/698 MHz band to the mobile service, and also emphasises that if a mobile allocation were adopted, it would significantly limit any future development of the terrestrial TV platform. Specifically, these studies have revealed the following:

- Spectrum demand for terrestrial broadcasting cannot be expected to decrease as linear television viewing remains strong, new higher resolution services (e.g. High Definition TV services) are expanding and while planning for Ultra High Definition TV is well underway;
- **The need for certainty to invest in DTT deployment** - The DTT deployment in some regions is still only at an early stage, particularly in the developing countries in Regions 1, 2 and 3. Thus, the loss of the UHF band 470 - 694/698 MHz for their existing DTT networks and networks under deployment (particularly in Africa), which includes all ITU-R global DTTB systems, which are globally harmonised in planning criteria and protection ratios, would jeopardize the investments, plans and social objectives made by these countries.
- **The economic value of DTT –**
Content delivery: Broadcasters in many countries have invested heavily in establishing their broadcasting networks. In addition, millions of TV sets are sold every year and billions of TV sets are available in people’s households. This represents a considerable investment by consumers and broadcasters to deliver services through DTT.
Content production: DTT has supported the introduction of local TV stations by making available a low cost delivery platform; this has enabled the startup of local content production houses.
- **An efficient system** – Terrestrial broadcasting is the most reliable and efficient way to deliver TV to mass audiences;
- **Sharing with other spectrum users** - SAB/SAP applications, radio astronomy, aeronautical radionavigation services and wind profiler radar already successfully share spectrum with broadcasting in the 470 – 694/698 MHz. An IMT usage of the band would exclude these other services as well as broadcasting;
- **DTT delivers a hybrid future** – Linear broadcast and non-linear “catch-up” TV are coming together in new services (IBB, Integrated Broadcast Broadband systems). Broadcasters are making a major investment in this ‘hybrid’ service to boost viewer choice² and need regulatory certainty over access to spectrum for its delivery;

² See: http://www.digitaluk.co.uk/_data/assets/pdf_file/0004/87340/5-6-14_Freeview_and_Digital_UK_to_develop_Connected_TV_offer.pdf

- **Life saving** - As endorsed by the ITU, at times of natural or man-made disasters broadcasting is the most effective means to communicate with citizens who are in need of vital safety and emergency information³;
- **Uncertainty over IMT data forecasts**– Predictions of ‘explosive’ growth in data demand for IMT are highly uncertain with forecasting specialists repeatedly revising forecasts downwards;
- **Questions over ITU modelling** –ITU modelling⁴ used to produce data forecasts being used at WRC-15 have been called into doubt. In particular, spectrum specialist LS Telcom found the modelling used inputs which are ‘orders of magnitude too high’⁵;
- **Alternative sources of mobile capacity** – There are alternatives to boosting mobile broadband capacity other than allocating more spectrum. These include more efficient use of already available spectrum, e.g. the use of small cells⁶;
- **Wi-Fi will meet most needs** - There is clear evidence of the growing importance of Wi-Fi rather than mobile networks in meeting demand for data on mobile devices. The very most video content on mobile devices is consumed over Wi-Fi;
- **IP networks cannot meet viewer needs** – DTT must remain strong in the absence of IP networks able to serve mass audiences. Significant challenges which will need to be overcome before IP can match the coverage and reliability of DTT, which is described as the ‘cornerstone technology’ for free-to-view television’⁷;
- **Content Consumption Trends - Linear TV** viewing over different delivery platforms, including DTT, 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 day⁸). As a complement, **non-linear TV**, including recorded (PVR) and on-demand TV viewing (including time shifted) is increasing fast but these are in addition to linear TV consumption. User demand for non-linear television is often triggered by linear TV;
- **Sharing with IMT is not possible** – The results of the technical sharing studies conducted in preparation for WRC-15 show that, if one country wants to use the UHF band for broadcasting and a neighboring country wants to deploy IMT networks in the same band, sharing will be very difficult⁹.

Conclusion

Overall the detailed technical and policy studies undertaken since WRC-12 have fully endorsed that DTT should remain at the core of the UHF band. To this end **the signatories of this document endorse the NO CHANGE position for the 470 - 694/698 MHz frequency range.**

³ See [ITU-BT.2299 Broadcasting for public warning, disaster mitigation and relief.](#)

⁴ See [ITU-R Report M.2290](#)

⁵ See study 13 in Appendix 1.

⁶ See [Ofcom’s mobile data strategy.](#)

⁷ <http://stakeholders.ofcom.org.uk/binaries/consultations/700MHz/discussion/ftv.pdf>

⁸ See studies 9 and 12 in Appendix 1.

⁹ See study 1 in Appendix 1

Appendix 1 . Summary of studies.

- [Study 1: ITU-R Report BT.2337](#)

<http://www.itu.int/pub/R-REP-BT.2337>

ITU-R Sharing Studies – The results of the technical sharing studies conducted in preparation for WRC-15 show that, if one country were to use the UHF band for broadcasting and the neighboring country were to deploy IMT networks in the same band then significant exclusion distances would be required.

- [Study 2: ITU-R Report BT.2302](#)

<http://www.itu.int/pub/R-REP-BT.2302>

ITU-R Spectrum Requirements Studies – The results of the ITU-R questionnaire show that a majority of countries that responded in ITU Region 1 (including Europe, Africa and parts of Asia) indicated a future spectrum requirement of at least 224 MHz of UHF spectrum for DTT.

- [Study 3: ITU-R Report BT.2387](#)

<https://www.itu.int/pub/R-REP-BT.2387-2015>

ITU-R Spectrum/frequency requirements for bands allocated to broadcasting on a primary basis – The report identifies a list of spectrum / frequency requirements for current and new television, sound and multimedia broadcasting systems operating in the bands allocated to the broadcasting service on a primary basis.

- [Study 4: Pascal Lamy's Report 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>

European Commission (EC) High Level Group – The chairman’s report on the use of the UHF band 470-694 MHz noted that linear TV viewing will remain dominant for the foreseeable future, and that mobile standards are not currently capable of supporting broadcasting to mass audiences on big screens. The report recommends that there should not be a co-primary allocation below 700 MHz band (i.e. 470-694 MHz) until at least 2030. A review of the market situation should take place in 2025;

- [Study 5: RSPG Opinion on a long term strategy on the future use of the UHF band in the EU](#)

http://rspg-spectrum.eu/wp-content/uploads/2013/05/RSPG15-595_final-RSPG_opinion_UHF.pdf

The Radio Spectrum Policy Group (RSPG) has formulated an opinion on the future use of the UHF band (470-790 MHz) in the European Union. The opinion proposes that frequencies below the 700 MHz band shall remain available for DTT “for the foreseeable future”, i.e. until 2030;

- [Study 6: RSPG Opinion on common policy objectives for WRC-15](#)

http://rspg-spectrum.eu/wp-content/uploads/2013/05/RSPG15-593_final_RSPG_opinion_on_WRC-15.pdf

The RSPG has also published an opinion to assist in developing a set of common policy objectives on all agenda items that are to be discussed at WRC-15. With respect to agenda item 1.1 it recommends that EU Member States should “support no change to the existing allocation”;

- [Study 7: Commission Report COM\(2014\)536 on the Radio Spectrum Inventory](#)

<http://ec.europa.eu/digital-agenda/en/news/commission-report-radio-spectrum-inventory>

The EC has undertaken a review of spectrum usage and reported that spectrum demand for both the terrestrial broadcasting and mobile sectors will increase in the short, medium and long term,

whilst noting that spectrum already allocated to the mobile broadband service remains significantly under-utilised at c. 30%. Consequently, the Commission believes that there is currently no need to for additional spectrum harmonisation beyond the 1200 MHz target identified in the Radio Spectrum Policy Programme (RSPP) in the range of 400 MHz – 6GHz for licensed wireless broadband.

- [Study 8: Plum Study on broadcast-broadband convergence and its impact on spectrum and network use](#)

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

The EC commissioned a study looking at the developments in the delivery of audio-visual and internet services over the next 15 years and the cost/benefits of a wireless converged platform. The main findings are: that the economic case for a converged platform is not as yet made due to big uncertainties in the value of sub-700 MHz spectrum and the impact on DTT of IPTV.

- [Study 9: ECC Report 224 Long Term Vision for the UHF broadcasting band](#)

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

ECC Report 224 considering a “Long term vision for the UHF broadcasting band” was published in 2014. The Report is the result of a study on the future use of UHF frequencies, with a focus on the 470-694 MHz band. The report highlighted the important role of the DTT platform that provides free-to-air access to TV services and is essential for Public Service Broadcasting.

- [Study 10: Aetha study on “Future use of 470-694MHz”.](#)

<http://aethaconsulting.com/downloads/Aetha%20future%20use%20of%20the%20470-694MHz%20band%20in%20the%20EU%2031%20Oct%202014.pdf>

The results of this report show that even with the most aggressive mobile traffic forecast, the costs of clearing DTT from the spectrum (EUR38.5bn) would 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.

- [Study 11: The value of DTT in an era of increasing demand for spectrum – Communications Chambers, 2014](#)

[http://www.digitaluk.co.uk/_data/assets/pdf_file/0015/87000/The Value of DTT in an era of increasing demand for spectrum_20-1-14.pdf](http://www.digitaluk.co.uk/_data/assets/pdf_file/0015/87000/The_Value_of_DTT_in_an_era_of_increasing_demand_for_spectrum_20-1-14.pdf)

The report demonstrates that:

- DTT plays a critical role in the overall UK broadcasting and content ecology.
- The economic benefits of DTT are considerable and higher than previously estimated.
- DTT delivers more value than mobile broadband, when the amount of spectrum used by the respective services is taken into account.
- A strong DTT platform is critical to healthy competition in the TV market, and to the realisation of a wide range of social benefits.

- [Study 12: Roadmap for the evolution of DTT – Analysys Mason](#)

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

The report demonstrates that DTT will remain a strong platform which offers significant benefits to consumers. Despite different DTT technology adoption roadmaps across countries, current efforts and achievements ensure a clear future roadmap for the next 10-20 years. The DTT industry continues to work to ensure it meets consumers’ expectations to 2030 and beyond. Therefore,

regulators and policy makers are providing the right long term framework, the TV industry is well prepared, with the support of consumers, to ensure that DTT platform remains a strong TV distribution platform.

- [Study 13: Mobile spectrum requirement estimates, getting the inputs right](#)

<http://satellite-spectrum-initiative.com/files/Mobile%20Spectrum%20Forecast%20final%20report%20v106%5b1%5d.pdf>

The report suggest that before it is used to estimate the spectrum demand for terrestrial IMT, the inputs to the ITU spectrum demand model (ITU-R Report M.2290-0) should be revised to match projected levels of traffic for individual countries in 2020, and benchmarked against best practice network build-out expectations (e.g. number of cell sites of different types, use of offload in different environments).

- [Study 14: Wik/Aegis, Study on Impact of traffic off-loading.](#)

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

Credible data captured from a range of sources emphasises that the volume of traffic that is already being off-loaded, chiefly to Wi-Fi in the home, already exceeds that of the mobile network, and can be expected to grow even faster over time. Traffic off-load generates surprisingly large socio-economic benefits by virtue of the cost savings realised by Mobile Network Operators by avoiding the roll-out of denser networks as an alternative to data traffic off-load.