

EBU

OPERATING EUROVISION AND EURORADIO

BROADCASTING SPECTRUM IN THE FOCUS OF WRC-19/23

ELENA PUIGREFAGUT

THE FUTURE OF TV FOR EUROPE -
7 JUNE 2019 | GENEVA, SWITZERLAND





TV SERVICES DEPEND ON SPECTRUM

- › This refers to the whole audiovisual media value chain: from content creation up to the reach of the user display
- › Different platforms used: terrestrial, satellite, broadband (fixed, wireless) in function of service requirements as coverage, quality, reliance, capacity, etc...
- › Each platform has a unique role in the audiovisual media value chain

1 PRODUCTION

Different bands:

- PMSE:
 - Audio: VHF, UHF...
 - Video: 2 GHz, C Band...
- Fixed links and broadband:
 - terrestrial/wireless
 - satellite

2 CONTRIBUTION

Different bands:

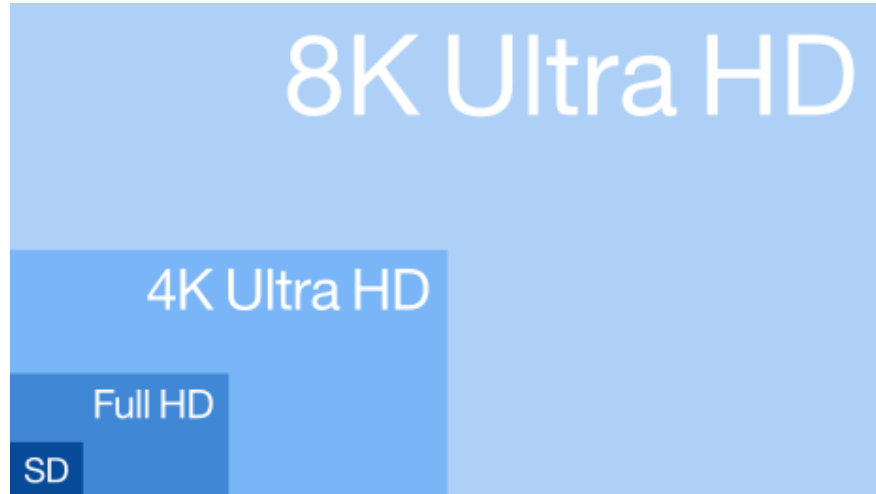
- Fixed links:
 - terrestrial
 - Satellite: C band, Ka band, Ku band
- Broadband:
 - Fixed/wireless

3 DISTRIBUTION

- Terrestrial - DTT: UHF, VHF (in some countries)
- Satellite – DTH: Ku band



TV QUALITY REQUIREMENTS ARE INCREASING



UHD = RESOLUTION

+ HDR

+ HFR

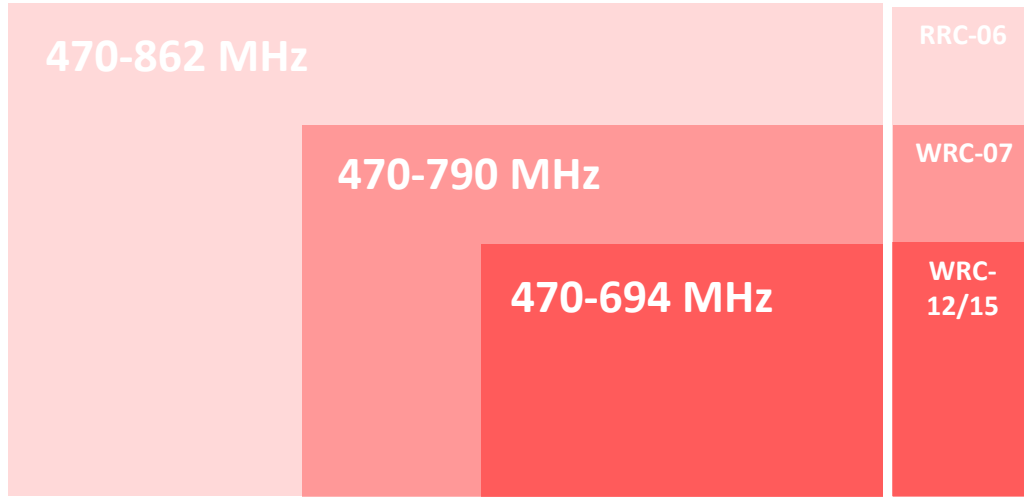
+ WCG

+ Next-Gen Audio

- › The broadcast industry is developing more efficient codecs:
 - › MPEG2 > MPEG4 > HEVC > work in progress: VVC, MPEG-5 EVC



SPECTRUM AVAILABILITY FOR TV IS DECREASING



- › The lower part of the downlink C-Band (3.4-3.8 GHz) is not available anymore in Europe for TV contribution

- › The broadcast industry is developing more efficient distribution standards
 - › DVB-T > DVB-T2 (very close to Nyquist-Shannon limit!)
 - › DVB-S > DVB-S2 > DVB-S2X



WRC-19 DOES NOT SEEM TO DIRECTLY IMPACT SPECTRUM USED BY TV SERVICES

- › The EBU identified the following agenda items that relate to broadcasting:

Agenda item	Spectrum concerned
1.1	50-54 MHz
1.3	460-470 MHz
1.13	40.5-42.5 GHz
8	Changes to footnotes
9.1.6	LF and MF bands
9.1.7	None (use of VSATs)
10 (WRC-23)	470-694/960 MHz



BUT TV SERVICES MIGHT STILL BE CONCERNED AT WRC-19

- › If WRC-19 agenda would be changed
 - › To include the UHF band, C-Band or Ka Band for an allocation to Mobile Services and identification for IMT
 - › This already happened at WRC-12 for the UHF band
- › If preliminary WRC-23 agenda would be changed
 - › To modify the current agenda item on the UHF band to remove the flexibility of possible outcomes
 - › To add a new agenda item for IMT affecting bands between 1-6 GHz or below 24 GHz, e.g. affecting the C-Band, Ku or Ka bands



EUROPE WILL NEED TO BE READY FOR WRC-23

1. We need Win-Win solutions for Europe (e.g. 600 MHz FDD band plan is not)
 - › IMT uplink can not easily coexist with DTT or DVB-S2 or PMSE
2. We need flexibility in the use of the 470-694 MHz band to allow continuation of DTT where needed and of PMSE
 - › Guaranteed access to the 470-694 MHz band until at least 2030 (DECISION (EU) 2017/899)
 - › Can DTT and 5G Broadcast/FeMBMS coexist? Technical and regulatory solutions would be needed
3. We need to continue the access to C-Band, Ku and Ka bands
 - › Those bands are essential for international TV services, contribution and DTH services

FOLLOW THE EBU

› You can find us here:



@EBU_HQ



facebook.com/EBU.HQ



linkedin.com/company/ebu



instagram.com/ebu_hq/



EBU UPDATE monthly newsletter

MANY THANKS !

(10)