



EBU

OPERATING EUROVISION AND EURORADIO

TECHNOLOGY & INNOVATION

Get an edge

THE UHF BAND - KEY FOR BROADCASTING INNOVATION

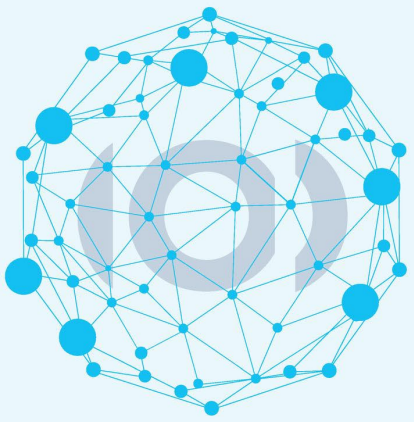
ELENA PUIGREFAGUT, EBU T&I
SENIOR PROJECT MANAGER

UK SPECTRUM POLICY FORUM PLENARY - 28TH APRIL 2022

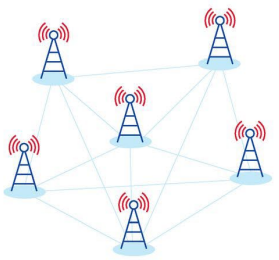


THE EBU COMMUNITY IN NUMBERS

The European Broadcasting Union
is the world's leading alliance
of Public Service Media



COMPOSED OF




113
MEMBER
ORGANIZATIONS

IN **56**
COUNTRIES



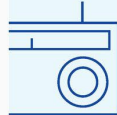
OPERATING

473



TV CHANNELS

699



RADIO STATIONS

597



LOCAL WINDOWS



1315

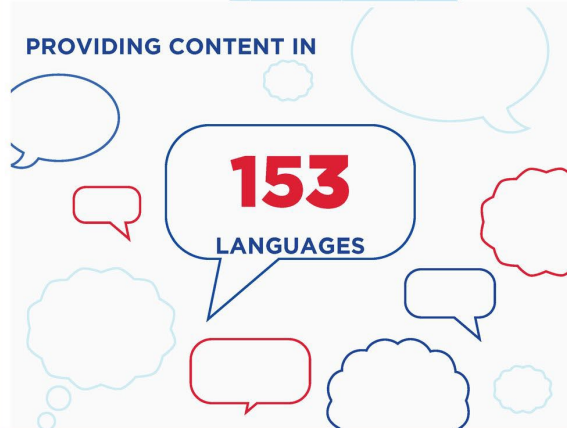
ONLINE SIMULCAST
CHANNELS AND STATIONS



284

EXCLUSIVE ONLINE
LINEAR SERVICES

PROVIDING CONTENT IN



153
LANGUAGES

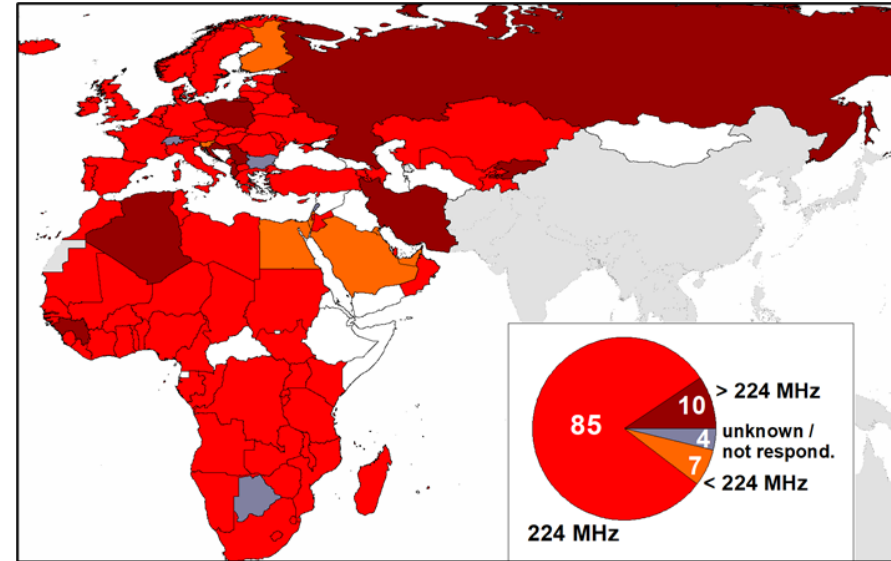
TO A POTENTIAL AUDIENCE OF

1.07
BILLION PEOPLE



DTT IN THE UHF BAND RETURNS HUGE PUBLIC VALUE TO OUR SOCIETY

- › Linear TV viewing remains as high as ever: 3 hours 43min per day in 2020 with peak records in 2020 (peaks of over 5 hours)
- › 89% of the total viewing is live TV, 11% time shifted in 2020
- › DTT available in 106 countries in Region 1 reaching 100 Million households – 250 million viewers in the EU
- › More than 19.5 Eur billion/year invested in content creation
 - › 84% in original productions
 - › 89% TV output is domestic or EU origin
- › DTT offers near universal coverage, free to air, efficiency, prominence, no gatekeepers
- › DTT technical resilience is essential for its role in national media sovereignty and in reaching population in times of crisis



Source: [Report ITU-R BT.2302-1 \(03-2021\)](#)
(under revision as per 2 updated replies)
'Spectrum requirements for terrestrial television
broadcasting in the UHF frequency band in Region 1
and the Islamic Republic of Iran'

ONGOING INNOVATION IN UHF BAND

TO RESPOND TO AUDIENCE TRENDS

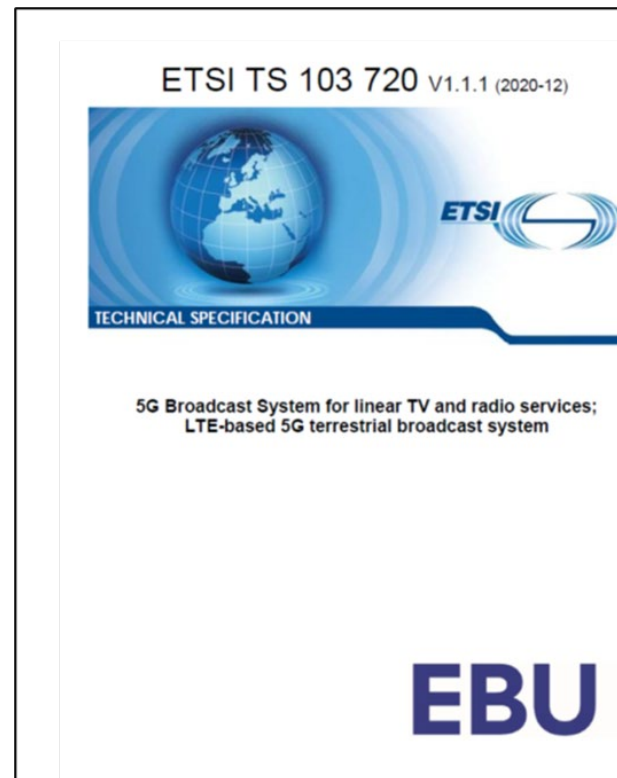


- › Increasing technical quality needed for ever larger TVs
- › Extended range of services both linear and on-demand
 - › On-demand viewing of TV content is increasing by 1-2 % per year - total across all user devices
- › HbbTV uses a combination of broadcast and broadband to deliver the whole range of content to stationary TVs
- › 5G Broadcast to reach personal devices (smartphones and tablets) and cars.
 - › New standalone broadcast standard
 - › Standardisation in 3GPP and ETSI completed
 - › Many new features (free-to-air, shared broadcast, no uplink required, SIM-free, ...)
 - › Technical validation through tests and trials; both mobile and stationary use cases

IMPLEMENTING 5G BROADCAST



- › The Standard: ETSI TS 103 720
'LTE-based 5G terrestrial broadcast system'
 - › It is a standalone downlink technology (i.e. from the transmitter to the user) which does not require an uplink
- › The channel bandwidth of 6, 7, 8 MHz to be standardised in 3GPP
- › The network: flexible configurations possible including HP-HT, MP-MT, LP-LT and their combinations, for optimal coverage
- › Frequency bands: UHF, potentially also SDL bands
- › Compatible with DTT and PMSE in the UHF band
- › Can be introduced in the UHF band under GE06 Agreement without changes to the current regulation
- › Supported by the latest generation of mobile chipsets; 5G-MAG is working on the ecosystem.



WHY CO-PRIMARY MOBILE ALLOCATION BELOW 694 MHz IS NOT A GOOD SOLUTION



IMT networks in the UHF band are not technically compatible with DTT and PMSE.

- › Critical case: Interference from DTT to mobile uplink reception
 - › geographical separation distances of several 100s of km
 - › confirmed by theoretical studies and practical experience
- › Individual countries are not free to choose how they use the spectrum because they have to protect their neighbours.
 - › National flexibility is not realistic.
- › A choice would need to be made for the whole Europe (as it was necessary in the 700 MHz and 800 MHz bands)
 - › If spectrum below 694 MHz continues to be used for broadcasting, then a mobile allocation is not needed.
 - › If the band is repurposed for the mobile, this would eliminate the current benefits of DTT and PMSE and stop the ongoing innovation in the band.

THE UHF BAND IS CRUCIAL FOR MEDIA

- › DTT and PMSE (wireless audio production systems) rely on the UHF frequency band. The 470-694 MHz range is the only globally available spectrum for DTT.
- › DTT is crucial for Public Service Media: near universal coverage, free to air, resilience in time of crisis, efficient to deliver media content to mass audiences, prominence, no gatekeepers.
- › PMSE is needed to produce content for all distribution platforms (including online and on-demand), but also for live events, such as sports, political, cultural, tradeshow, education, community and many others.
- › 5G Broadcast system can provide a 'broadcast service', is technically compatible with DTT and PMSE and can be introduced in the UHF band under the GE06 Agreement and the current regulation.
- › 5G Broadcast will complement the existing usage and will not replace DTT.
- › 5G can be used for some production use cases but cannot meet the most stringent production requirements. The current R&D and trials show that 5G cannot replace conventional audio PMSE in the foreseeable future.
- › 'Co-primary' mobile allocation to Mobile Services in UHF would damage the future prospects for DTT and PMSE, with only a marginal gain to the mobile services. It would not bring 'flexibility' as sharing of the band between DTT and mobile services is technically very difficult.
- › The European Broadcasting Union (EBU), the African Union of broadcasters (AUB), the Arab States Broadcasting Union (ASBU), the World Broadcasting Union Technical Committee (WBU-TC) and the European Broadcast Network Operators (BNE) in Region 1 all support a "No Change" position at WRC-23.



MANY THANKS !

puigrefagut@ebu.ch

tech.ebu.ch