

**African Telecommunications Union**

# Digital Terrestrial Television Broadcasting in Africa

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# Agenda

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1. Digital terrestrial television in Africa.
2. Digital Switchover in Africa.
3. Terrestrial TV Strengths and Challenges in Africa.
4. Agenda item 1.5 (WRC-23).
5. ITU studies A11.5 (WRC-23) on spectrum use and needs.
6. African Common View and/or Position.
7. 5G Broadcast.
8. Conclusion.

# Digital terrestrial television in Africa

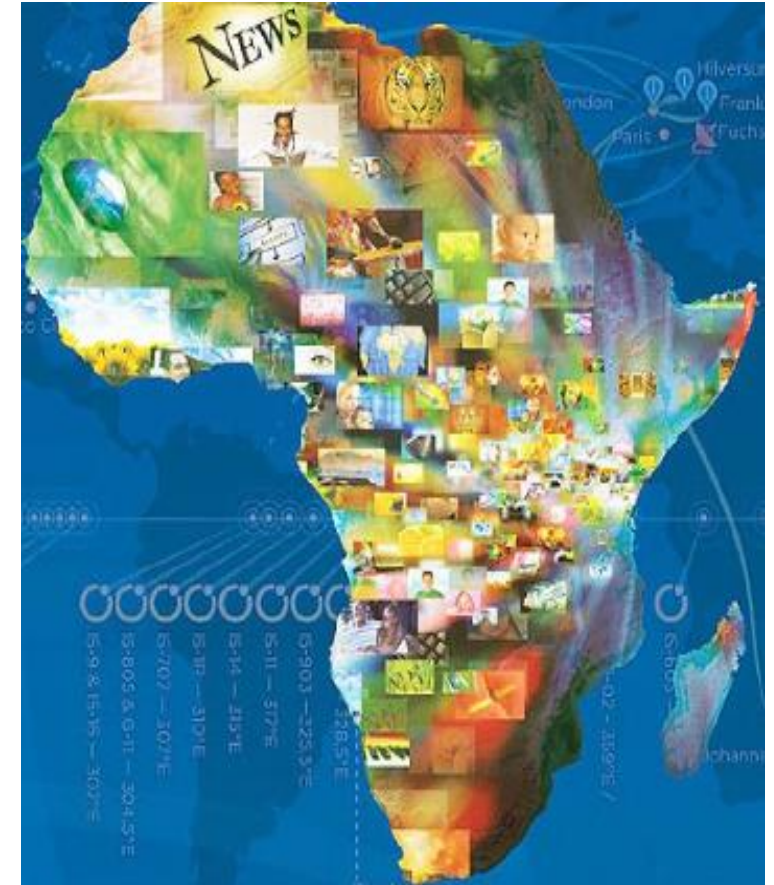
- **Digital terrestrial television (DTT)** is a broadcasting technology that allows TV stations to transmit their signals to users using digital signals.
- A single analogue TV channel can occupy up to 8 MHz of bandwidth, the same quantity of spectrum can support up to 20 digital television programs.
- By improving spectral efficiency, countries have the option of assigning spectrum for additional / high-throughput television services or reallocating digital dividend spectrum for services such as mobile broadband, public protection and disaster relief (PPDR), dynamic spectrum assignment (DSA), etc.
- Consumers can enjoy a broader array of content offerings and clearer image quality through DTT.
- DSO has important implications for individuals, economies, and societies.



# Digital Switchover in Africa

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- 14 African countries had completed the transition to DTT.
- There have been some success stories, which completed the transition in the early stage.
- **Several countries (26)** are still completing their migrations as of 2023.
- **In Egypt**, Number of population covered by Digital TV around 90% by the end of 2021.
- **Central African Rep., Burundi, Eritrea, and Libya** had not yet started.





# Common threads and Challenges

- **Cameroon and Egypt** experienced challenges associated with the absence of a clear timeline to see the switchover through to completion.
- **Kenya** experienced some challenges associated with consumer awareness and set-top box (STB) pricing, as well as unexpected roadblocks in the form of legal challenges from the broadcasting industry.
- **Senegal** encountered some challenges associated with the establishment of its new licensing framework for DTT.
- **Tanzania** Tanzania's new licensing framework for DTT required some tweaks to ensure that it was fit for purpose, it had a comparatively smooth migration experience that benefited from strong consumer engagement.

**Each country had a unique experience**

COMMON THREADS	CHALLENGES
<ul style="list-style-type: none"><li>• Issues related to consumer outreach</li></ul>	<ul style="list-style-type: none"><li>• Consumer awareness of the transition</li></ul>
<ul style="list-style-type: none"><li>• Legal and regulatory framework overhauls to accommodate digital broadcasting</li></ul>	<ul style="list-style-type: none"><li>• The need for regulatory changes</li></ul>
<ul style="list-style-type: none"><li>• Stakeholder engagement</li></ul>	<ul style="list-style-type: none"><li>• Funding difficulties</li></ul>
	<ul style="list-style-type: none"><li>• Legal challenges</li></ul>

# Terrestrial TV Strengths in Africa

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- Free to air, wide public, reception is always possible, both in cities and rural areas.
- Most trusted media.
- Public warning, disaster mitigation, and relief.
- Ongoing digitalization, i.e. better quality, more choices, new features, more efficient use of spectrum, and cost savings
- Terrestrial networks play a key role in securing the sovereignty of a nation state in communicating to its citizens.



# Terrestrial TV Challenges in Africa

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- The transition to Digital terrestrial television (DTT) requires significant investment in infrastructure, including the deployment of new transmitters, and other equipment.
- **Cost to consumers:** To receive DTT signals, consumers must have a set-top box or other equipment capable of receiving digital signals. This can be a significant expense for many users in Africa.
- **Technical expertise:** The transition to DTT requires technical expertise in areas such as signal processing, network management, and equipment maintenance.





# Agenda item 1.5 (WRC-23)

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- ▶ To review the spectrum use and spectrum needs of existing services in the frequency band **470-960 MHz in Region 1** and to consider possible regulatory actions in the frequency band **470-694 MHz in Region 1** on the basis of the review in accordance with Resolution 235 (WRC-15);

## Summary of Methods to Satisfy Agenda Item CPM23-2

- **Method A:** No Change. For this method. **2 alternatives are developed.**
- **Method B:** Primary allocation to the mobile service in the frequency band **470-694 MHz** with or without identification to IMT in the frequency band **470-694 MHz** or parts thereof in Region 1. **3 alternatives are developed.**
- **Method C:** Primary allocation to the mobile, except aeronautical mobile, service in the frequency band **470-694 MHz** and identification to IMT in the frequency band **470-694 MHz or parts thereof in Region 1.** **9 alternatives are developed.**
- **Method D:** Primary allocation to the mobile, except aeronautical mobile, service within the band **470-694 MHz** without IMT identification. Suppression of Resolution 235 (WRC-15). **5 alternatives are developed.**
- **Method E:** Primary allocation to the mobile, except aeronautical mobile, service of the band **470-694 MHz** in Region 1 with technical conditions limiting mobile operations to downlink in this band.
- **Method F:** Secondary allocation to mobile, except aeronautical mobile, service in the band **470-694 MHz** in Region 1. **3 alternatives are developed.**
- **Method G:** Considerations of the radio astronomy service

# ITU studies A11.5 (WRC-23) on spectrum use and needs

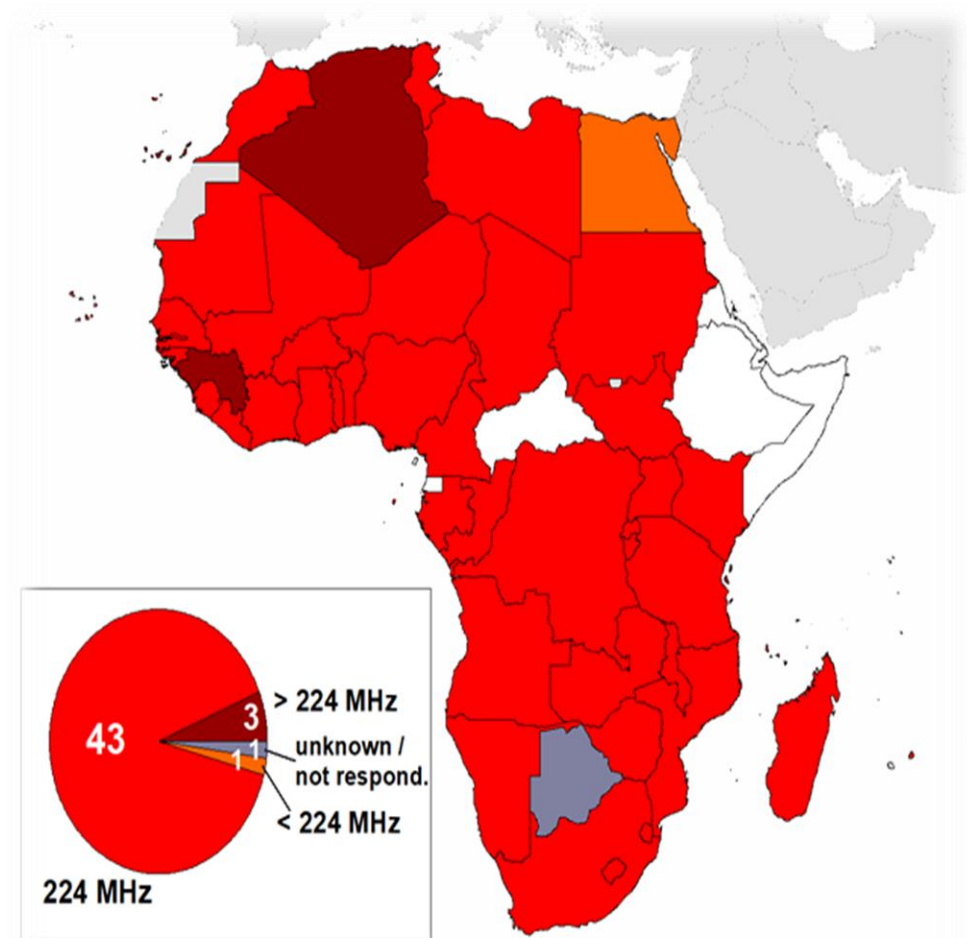
## Broadcast Service

- 43 African administration confirmed that 224 MHz is required for broadcasting in the future (i.e., the full 470–694 MHz)

## Mobile Service

- One administration foresees requirement for spectrum in addition to 700, 800, and 900 MHz bands identified for IMT
- Three administrations consider 470–694 MHz for IMT pending study outcomes

Based on responses to circular letter CACE/963 and ATU questionnaire as summarised in ITU-R TG6.1.AR Contribution 45 (ITU-R WP 5D)



Responses to Circular Letter 6/LCCE/104 as summarised in ITU-R BT.2302-1 analysed by African Administrations (ITU-R WP 6A)

# African Common View and/or Position

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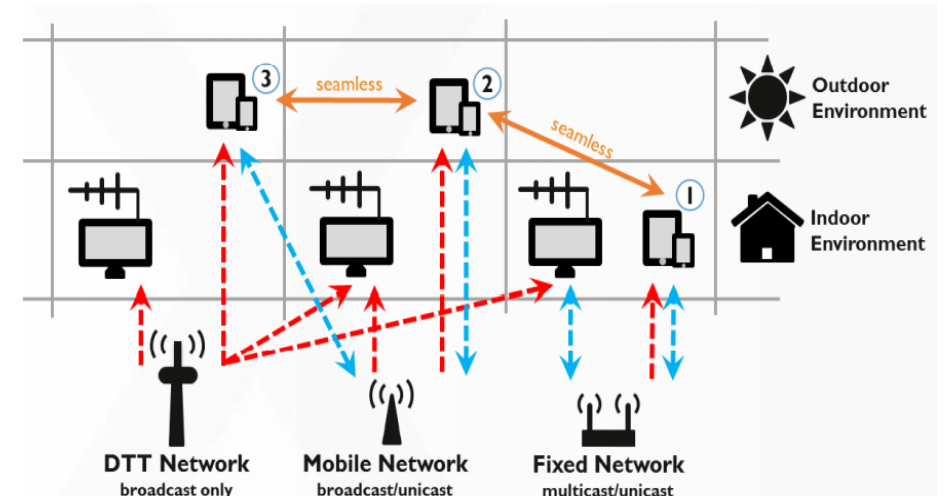
- **APM23-3:** agreed to decide that a position on this agenda item will be developed once drafting of the CPM text and agreement on proposed methods have sufficiently progressed in accordance with Resolution 235 (WRC-15).
- **APM23-4:** Final decision ((7 to 11 August 2023 (Cameroon)))
- **Position of Some African administrations:**
  - The frequency band 470-694 MHz is a vital band for Digital Terrestrial Television Broadcasting in Region 1, to continue providing free-to-air television programs.
- **Position of Some other African administrations:**
  - Allocate 470-694 MHz for Mobile and Identify 614-694 for IMT

# 5G Broadcast

- **5G Broadcast**, a new era in mobile media delivery, is a new technology that is being developed in line with market requirements.
- The developments relate to high-power high-tower (HPHT) networks, namely Further evolved Multimedia Broadcast Multicast Service (FeMBMS), and low-power low-tower (LPLT), namely 5G use cases for broadcasting.
- Users do not need neither an internet connection nor SIM to receive content on 5G-compatible end devices unlike streaming.
- 5G broadcast enables the connection of unlimited number of hand-held devices can be reached via a single HPHT transmitter.
- **5G broadcast** means that unlimited number of mobile devices can be reached via one transmitter.



**One to Many mobile devices**

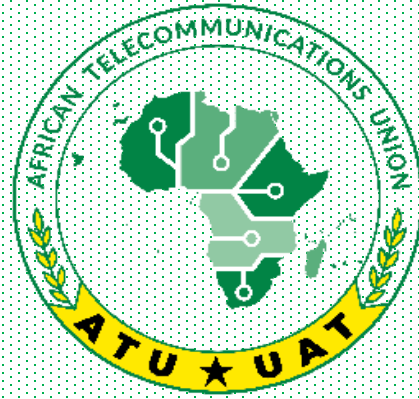


**Converged media delivery architecture**

# Conclusion

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- The future of DTT in Africa will be noticeably influenced by the decisions agreed to and taken at WRC-23, taking into consideration that UHF is the only harmonized band for terrestrial television in Region 1.
- The 470-694 MHz band can meet most current national Spectrum needs for Digital Terrestrial Television Broadcasting including complementary technologies such as Integrated Broadcast Broadband (IBB) and 5G Broadcast.
- The 470-694 MHz band offers sufficient capacity to improve the quality of HDTV for most programs and possibly to UHD TV for some programs.



# THANK YOU

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