



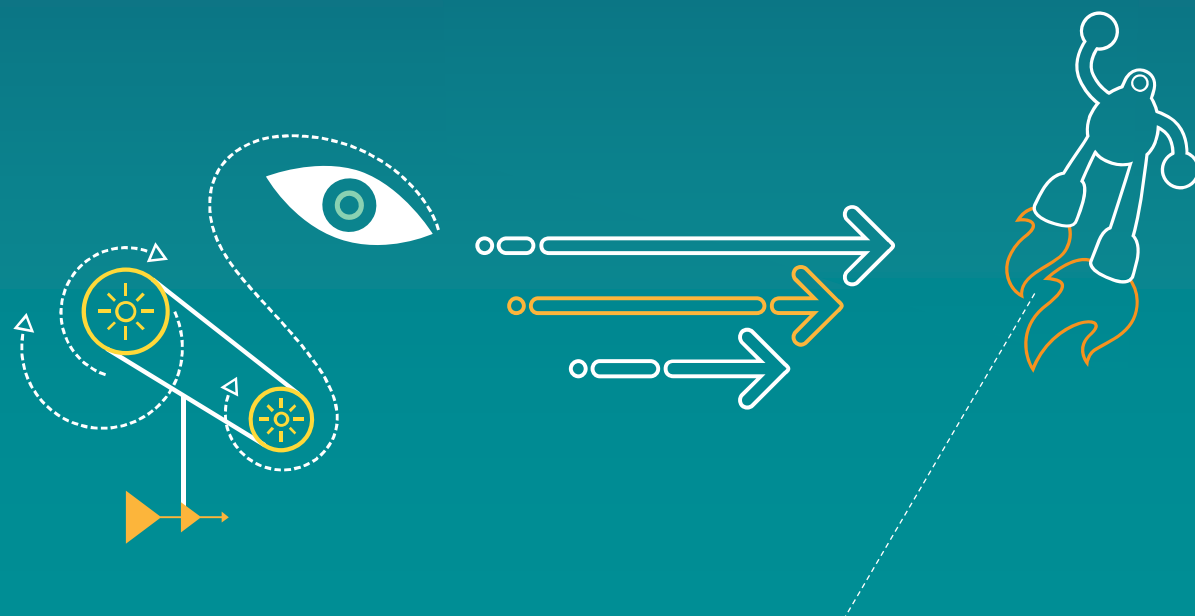
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## TV White Spaces and the Decisions of WRC-12

FORUM on Future of UHF in Africa, RRS-13-Africa,  
16- 20 September 2013, Yaoundé, Cameroon

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# Agenda

- 1 WRC-12 Relevant Resolutions, Proceedings and Recommendations**
- 2 Digital Dividend Harmonization in Africa**
- 3 ITU-R WP 5D and JTG 4-5-6-7 Digital Dividend related Studies**
- 4 Conclusion and Recommendations**

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## Resolution 232 (WRC 12) – 1/2

### Use of the frequency band 694-790 MHz by the mobile, except aeronautical mobile Service in Region 1 and related studies

- *Resolve 1*, to allocate the frequency band 694 -790 MHz in Region 1 to the mobile, except aeronautical mobile, service on a co-primary basis with other services to which this band is allocated on a primary basis and to identify it for IMT
- *Resolve 2*, that the allocation in *resolve 1* is effective immediately after WRC-15;
- *invites ITU-R*, to to study the channelling arrangements for the mobile service, adapted to the frequency band below 790 MHz, taking into account:
  - the existing arrangements in Region 1 in the bands between 790 and 862 MHz and defined in the last version of Recommendation ITU-R M.1036, in order to ensure coexistence with the networks operated in the new allocation and the operational networks in the band 790-862 MHz,
  - the desire for harmonization with arrangements across all Regions,
  - the compatibility with other primary services to which the band is allocated, including in adjacent bands;

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## Resolution 232 (WRC 12) – 2/2

### Use of the frequency band 694-790 MHz by the mobile, except aeronautical mobile Service in Region 1 and related studies

- *Invites the Director of the Radiocommunication Bureau*
  - to work, in cooperation with the Director of the Telecommunication Development Bureau, to bring assistance to developing countries wishing to implement the new mobile allocation in order to help these administrations to determine the modifications of the Geneva-06 Plan necessary to keep sufficient capacity for broadcasting
  
- *Invites Administrations*
  - to participate in these studies and to indicate as quickly as possible, in the process of preparation for WRC-15, the spectrum requirement for the mobile service, the broadcasting service and the other services, in order to determine the options for the frequency band to be allocated to the mobile service, as well as the related channelling arrangements

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# Digital Dividend Harmonization in Africa

## Background

- 1<sup>st</sup> Digital Migration and Spectrum Policy Summit: Nairobi, November 2011
  - Decision to pursue Mobile Allocation at 700 MHz at WRC-12
- ITU/ATU Frequency Coordination Meeting on the Transition to Digital Terrestrial Television and the Digital Dividend for western and Central African Countries; Bamako, Mali 12-15 March 2012 (West & Central Africa)
  - Modification of GE06 Plan using the procedure of the GE06 Agreement
- ITU/ATU Frequency Coordination Meeting on the Transition to Digital Terrestrial Television and the Digital Dividend for Eastern and Southern African Countries; Kampala, Uganda 16-20 April 2012
  - Modification of GE06 Plan using the procedure of the GE06 Agreement
- ITU/ATU Final Frequency Coordination Meeting on the Transition to Digital Terrestrial Television and the Digital Dividend for Sub-Sahara African Countries; Nairobi, Kenya 17-19 July 2013
  - Finalize the GE06 frequency plan using the procedure of the GE06 Agreement

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# Digital Dividend Harmonization in Africa

## Recommendations from ITU/ATU Frequency Coordination Meetings in Africa

- In the band 470-694 MHz modifications of the GE-06 are feasible by which each country in Western, Central, Eastern and Southern African region may be provided with the capability of four nationwide coverage with acceptable interference levels
- Recommended timeline of major regional activities:
  - September 2012: 2<sup>nd</sup> ATU Digital Migration and Spectrum Policy Summit, focusing on the transition to digital TV and harmonization of the digital dividend.
  - September 2012: end of informal frequency coordination discussions and start of formal activities for the modifications of GE-06 Plan
  - December 2012: adoption of a common digital TV standard at sub-regional or regional level in Africa
  - June 2013: Finalization of the establishment of national legislative and regulatory frameworks for the transition to digital TV and the allocation of the digital dividend
  - June 2013: End of frequency planning activities (national and international) for the deployment of digital TV and analog switch off
  - September 2013: Start of deployment of digital TV
  - June 2014 : start of analog switch off in the UHF band
  - 17 June 2015 : end of analog switch off in the UHF band

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# Digital Dividend Harmonization in Africa

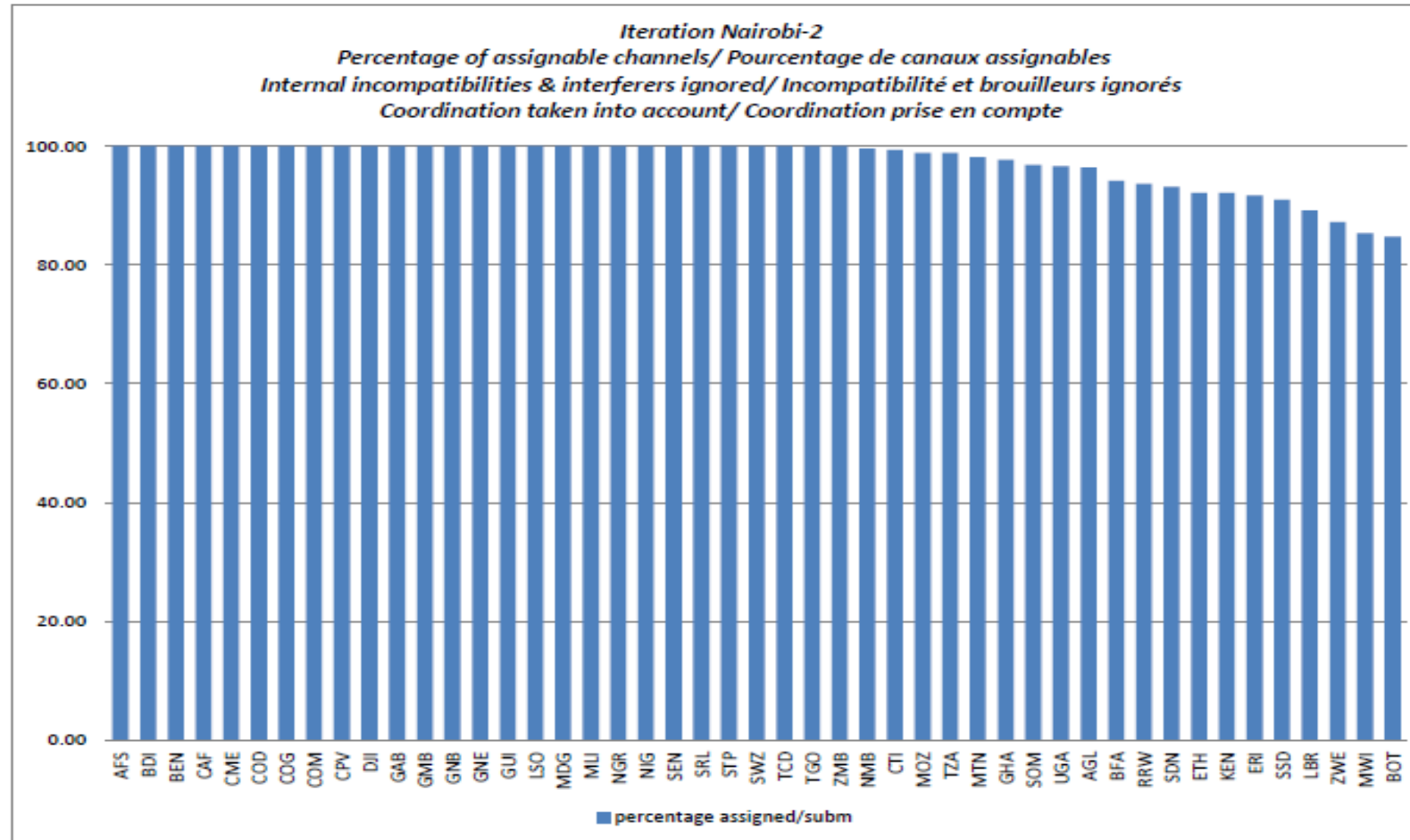
The ATU “2<sup>nd</sup> Digital Migration and Spectrum Policy Summit” held in September 2012, in Accra provided the following recommendations on the modification of the GE06 Plan:

- Recommendation 1: Adopt the Recommendations from the Bamako and Kampala frequency coordination workshops
  - The broadcasting services (DTT) will be accommodated within the band 470 – 694 MHz ( UHF channels 21 to 48) after finalization of modifications of the GE06 Plan
- Recommendation 2: Move to formalize the hitherto informal Frequency Coordination and to modify the GE06 Plan in accordance with the Agreement
- Recommendation 12: ATU and ITU should organize, at the earliest opportunity, a final frequency coordination workshop for all African countries to enable finalization of modifications of the GE06 Plan.
  - Workshop to finalize the GE06 frequency plan modification in partnership with ITU, July 2013



# Digital Dividend Harmonization in Africa

Attainability percentage to achieve 4 DTT multiplexes or more within the band 470 –694 MHz band



- 47 Sub-Saharan African countries agree on frequency coordination for digital switchover in 2015
  - [http://www.itu.int/net/pressoffice/press\\_releases/2013/32.aspx](http://www.itu.int/net/pressoffice/press_releases/2013/32.aspx)

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# ITU-R WP 5D and JTG 4-5-6-7 Digital Dividend related Studies

- WP 5D, Agenda item 1.2 preparations – – study of the frequency range 694 – 790 MHz for Region 1
  - Various channelling arrangements are under consideration within Working Party 5D
  - Draft report on harmonized channeling arrangements for IMT adapted to the frequency band below 790 MHz down to around 694 MHz for Region 1 is under development and planned to be finalized in October 2014
- JTG to finalize sharing/compatibility studies between IMT uplink and DTT receivers around 694 MHz by its February 2014 Meeting: e.g. Decision on OOB limits and Guard Band

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# Conclusion and Recommendations

- There is worldwide momentum to use 700 MHz frequencies for licensed mobile broadband, i.e., LTE.
  - The two past International Telecommunication Union World Radiocommunication Conferences and the next WRC will advance global plans for usage of these bands for IMT that are being deployed worldwide
  - The potential benefits and value of the UHF spectrum is increasingly recognized by governments and the mobile industry
- The ongoing modification of the GE06, suggests that 694 MHz – 790/862 MHz will be allocated for deployment of mobile broadband in AFRICA
  - ITU-R Working Party 5D is already conducting relevant work on Channelling arrangement for the frequency range 694 – 790 MHz for Region 1
  - JTG 4-5-6-7 is conducting sharing/compatibility studies between IMT and DTT around 694 MHz boundary
- Conversation on TVWS should take into consideration the ongoing modification of the GE06 plan (where DTT will be accommodated within the band 470 – 694 MHz: UHF channels 21 to 48), as well as ongoing work within ITU-R, WP 5D & JTG on the usage of 694 – 790 MHz for mobile broadband by WRC15
  - Careful evaluation of the potential for deployment of TVWS to interfere with licensed LTE usage and/or delay deployments
  - the potential for interference to/from TVWS devices and broadcasting operations in the 470-694 MHz band.

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# Thank you

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