

**DIGITAL MIGRATION IN AFRICA:  
TECHNOLOGICAL CHALLENGES, FREQUENCIES AND DIGITAL DIVIDEND**

**INTERNATIONAL CONFERENCE :  
MIGRATION TO DIGITAL TERRESTRIAL TELEVISION  
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Ladies and Gentlemen, Ministers,  
Ladies and Gentlemen, Directors-General,  
Dear colleagues and friends,

It is a pleasure for me to address you this morning on the subject of the technological and frequency challenges associated with digital migration in Africa, with a particular focus on the question of the digital dividend.

The role of governments and regulators, and the mission of ITU and ATU, is to create an environment that is conducive to the development of telecommunication networks, in this case television broadcasting networks and broadband mobile networks.

As from the year 2000, African States associated themselves with the initiative for a regional conference devoted to planning the frequencies for digital television, as an essential prerequisite for digital migration. This led to the adoption, by the Regional Radiocommunication Conference held in Geneva in 2006, within the framework of ITU, of a regional agreement and a plan specifying the frequencies that the countries of Europe, Africa, the Middle East and Central Asia can use for the deployment of digital television without the risk of harmful interference.

The characteristics of broadcasting emissions (sites at high elevations, using high power) and the properties of frequency bands below 1 GHz, particularly the band 470-862 MHz (UHF) covered by this regional agreement, are such that interference can extend over hundreds of kilometres, necessitating regional planning to ensure the viability of the investments made by each country within the region.

The frequency plan and dates for analogue switch-off adopted by the 2006 regional conference have enabled the achievement of a number of fundamental objectives for digital migration by all the countries of the region:

- creation of an interference-free environment that encourages investment;
- a clear signal as to the existence of a market for terminals, facilitating harmonization of the standard and enabling economies of scale for adapters;
- harmonization of the migration date.

Digital migration, which ten years ago was seen by many broadcasters as an ambitious, if not reckless, objective, has now come to be viewed as a necessity underpinned by the desire on the part of users for more varied and higher-quality services; the need on the part of

broadcasters to reduce their network investment and maintenance costs while expanding coverage; the interest on the part of governments, for whom digital migration serves to free up valuable frequencies for nationwide broadband deployment, thereby deriving maximum benefit from this part of the spectrum; and, last but not least, the desire on the part of mobile operators to provide affordable coverage to sparsely-populated areas.

Since 2003, digital migration has thus been inextricably linked with the notion of digital dividend, and the associated frequency challenges have become key societal issues, inasmuch as economic and social progress is now seen to be very closely associated with the advance of broadband and, particularly in Africa, mobile broadband.

This awareness led the 2007 ITU World Radiocommunication Conference (WRC-07) to allocate 18 per cent of the upper part of the UHF television broadcasting band (790-862 MHz) to the mobile service, on the basis of equal rights with television broadcasting, and to identify it for international mobile telecommunications (IMT). Spurred on by the African countries, together with those of the Middle East, WRC-12, in a decision to be confirmed by WRC-15, broadened the field by adding a further 25 per cent of the band (694-790 MHz).

These decisions, taken by ITU at the global level, nevertheless leave it fully up to each Member State to decide whether to use the two bands for television or for mobile. The considerations in regard to potential interference that I mentioned earlier obviously call for a concerted decision, and it is here that I should like to applaud the role played by ATU, and in particular its Secretary-General, Mr Abdoukarim Soumaila, in securing the adoption of a concerted position on this matter on the part of all African countries:

- In December 2011, the Nairobi ministerial summit affirmed the political will of the African States to allocate the digital dividend to the mobile service throughout the 700 and 800 MHz bands and to review the Geneva 2006 Plan such as to satisfy the frequency requirements of television broadcasting below 694 MHz.
- In September 2012, the Accra ministerial summit confirmed these positions and recommended DVB-T2 and MPEG4 as continent-wide harmonized standards for digital television.
- In July 2013, the bilateral and multilateral negotiations initiated among the African countries in early 2012 with a view to reviewing the Geneva 2006 Plan in the light of these decisions were finalized in Nairobi, with the technical support of ITU.

This makes Africa, to date, the **only region** to have completed frequency coordination discussions for the deployment of digital terrestrial television, while at the same time being in a position to allocate the digital dividend in a harmonized manner to the mobile service in both the 700 and 800 MHz bands once WRC-15 has confirmed the conclusions of WRC-12, that is, **by late 2015**.

As a result, Africa is also in a position to consolidate the national digital migration plans while meeting the deadlines of June 2015 (for UHF) and June 2020 (for VHF, in some 50 per cent of countries) adopted by RRC-06. These are short deadlines, but current occupancy of the UHF band in Africa would appear to indicate that the objective is achievable. The existence of a coordinated frequency plan will make it possible to avoid subsequent frequency changes, the

costs of refarming, and associated interruptions to services or their disappearance, while the existence of a harmonized and effective standard will produce economies of scale in a market spanning the entire continent and encompassing also the countries of eastern Europe and the RCC.

This result is altogether remarkable, and I am aware of the major role you have played in achieving it.

In parallel, the adoption of a harmonized frequency plan for the mobile service in the 700 and 800 MHz bands, as called for by WRC-12, has made significant progress, offering African countries the possibility of broad economies of scale for the deployment of IMT mobile broadband in those bands, by combining the CEPT and APT plans, as recently recommended by GSMA.

Lastly, with ITU assistance where so requested, your countries have launched activities to prepare for DTT deployment. The results I have just highlighted should now make it possible to accelerate that process.

Ladies and gentlemen, Ministers,

Before concluding, I should also like to mention a recent development which has been the subject of considerable attention, namely white spaces in television. This concept, which makes for use without authorization, is put forward as a solution for the rapid deployment of broadband. However, it has the potential, if care is not taken, of weakening the edifice you have all been successfully building for almost ten years now.

The concept consists in using the gaps that exist in television broadcasting frequency planning for the deployment of local broadband access networks and associated infrastructure networks, with no regulatory guarantee (implementation without a licence, or as of right). At present, the concept is authorized only in the United States, in the band 470-698 MHz, which is set to reduce to 470-600 MHz following reverse auctions planned in the near future. Application of the concept in Africa would in theory allow rapid deployment of mobile broadband, as the UHF band is little used in Africa. Before any regulatory decision is taken, however, it must be ensured that the conditions under which it might be deployed will not harbour any uncertainty for the future. In this regard, the following issues arise:

- The standards for equipment using white spaces have not yet been finalized and the equipment is not yet available, unlike the situation in the UHF band for the mobile service (e.g. LTE standards and equipment).
- The success of WiFi is put forward in support of the use of white spaces without authorization. That success, however, has to do with the fact that the range of a WiFi device at 2.4 GHz or 5 GHz and the low power levels authorized limit the risk of interference between WiFi systems. Recourse to a system of this kind for an infrastructure or access network with greater range and power carries with it the potential for interference, inefficient use and rapid saturation of the spectrum.
- Whereas the licensing system that prevails for mobile service allocations allows national authorities to impose coverage obligations on operators to ensure equality between areas that are profitable and those that are less so or not at all, a system

- without licences provides no guarantee that more sparsely populated areas will be served. Use of the properties of the UHF band for national coverage is thus jeopardized.
- Whereas a licensing system makes it possible to secure investment by guaranteeing access to clean spectrum for the duration of the licence, a system without licences but with no guarantee of access to spectrum would not appear conducive to investment. The example of WiFi, where a lucrative service can be provided for a small or even zero investment (just look at the prices in some hotels), would not be possible if the concept were to be applied to the deployment of an infrastructure network.
  - Given the number of stakeholders involved, the political cost of backtracking would mean that any decision to allocate spectrum as of right would be irreversible. Under such conditions, would allocation of the digital dividend to mobile still be possible, even if that decision had been announced beforehand? What, moreover, would happen with the allocation of a third digital dividend for the 600 MHz band when it comes up? And what would happen if the deployment of digital television made it necessary to empty out the spectrum used by unlicensed infrastructures? Which of the two services (television or WiFi) would have to give way?

Before any decisions are taken at the national level, these questions should be properly discussed at the technical, economic, regulatory and operational levels, particularly within the ITU study groups dealing with spectrum management. I am sure that all governments and regulators are asking themselves these questions, and I therefore invite you to participate in the discussions. For its part, ITU will be organizing several workshops and forums over the coming months to look further into these issues, which have already been addressed at the last global symposium for regulators, held in July in Warsaw. If the use of white spaces is promising, it is important to understand the medium- and long-term implications in order not to jeopardize the deployment of mobile broadband in an attempt to accelerate it.

Ladies and gentlemen, Ministers,  
Ladies and gentlemen, Directors-General,

I should like to conclude by wishing you all every success with digital migration and deployment of the digital dividend in the 700 and 800 MHz bands. You can of course rest assured of the continued and full support of ITU in this undertaking.

I am confident that the exchanges that will take place here over the next two days will in no small measure contribute to ensuring that success, and I should like to thank the Minister, Madame Fleur Pellerin, for her initiative in convening this meeting.

Thank you for your attention.

François Rancy