Position paper for Africa on Digital Dividend/UHF band plans

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Administrations and spectrum managers are looking for solutions to maximise the socio-economical benefits of spectrum assets. In particular, national regulatory authorities are considering the policy options which enable rapid and effective extension of mobile broadband services.

The need for broadband in Africa is very clear: to stimulate economic development and to allow African citizens to participate in the global knowledge based economy. From a spectrum point of view, optimisation of the use of the UHF band is crucial for ensuring the widest geographical coverage of mobile broadband; this means that there is a need to maximise the amount of spectrum available to offer significant extra coverage benefits to African countries.

Policy makers should leverage existing national starting points – *mass market mobile access* – and consider how they can maximise spectrum for broadband services. African regulators should adopt an ambitious target of making available **a substantial quantity of internationally and regionally harmonised spectrum below 1 GHz, in non-fragmented allocations.**

GSMA indeed favours harmonisation of frequency bands used for mobile broadband services, in particular in the UHF band, as harmonisation helps to reduce the cost of terminals for consumers. At international level, GSMA supports three band plan options for UHF, namely :

Option 1. CEPT FDD preferred band plan in 790-862 MHz being developed for Region 1;

Option 2. Optimised "2 x 45" MHz conventional FDD band plan in 698-806 MHz agreed within the Asia-Pacific Telecommunity's Wireless Forum (AWF) for Region 3[1]; and

Option 3. US band plan in 698-806 MHz as specified by 3GPP.

Nevertheless, GSMA believes that African countries need to carefully weigh up the options that they have for UHF: since Africa is in ITU Region 1, the CEPT option would be the first choice as it would enhace the harmonisation within the Region 1 and it would also reduce cross-border issues with other ITU Region 1 countries (e.g. European countries facing the Mediterranean Sea).

However there may be circumstances where the adoption of the Region 3 optimised "2 x 45 MHz" band plan in 698 to 806 MHz (Option 2 above) may be better suited to African national market conditions:

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1 AWF-9/OUT-13 / September 2010

- If there is widespread use of part of the CEPT band for existing mobile services using the "850 MHz" bands (824 – 849 MHz paired with 869 – 894 MHz)
- If the national use of the bands below 790 MHz for broadcasting is limited; and
- If a "cluster" of immediate neighbours is to adopt the Region 3 band plan. Such "clustering" could help with managing cross border interference, and with roaming between those countries, but would complicate cross border issues with Region 1 countries who adopt the CEPT channel plan.

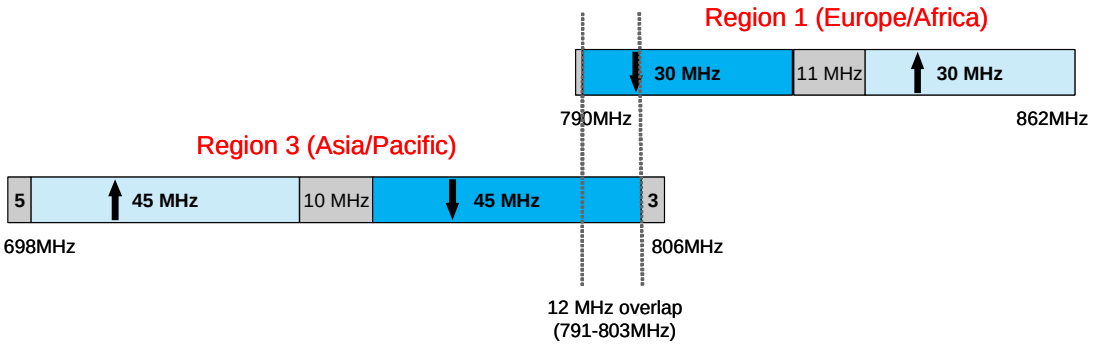


Figure 1: Frequency arrangements in Region 1 and Region 3

Moreover, if an Administration of Region 1 decides not to adopt the CEPT band plan, and instead adopts a plan where the uplink block overlaps the lower end of the CEPT band, this would give rise to the need for cross border coordination. Such coordination might be required over a distance of up to around 100 km. With the adoption of the CEPT band plan being mandatory within the European Union, many Eastern European and north African countries would suffer from and cause interference if they were to deploy a band plan having the uplink subband in the upper part of the frequency arrangement.

Non-EU European and African countries are therefore invited to follow the ITU Region 1 identification for IMT in 790-862 MHz using the CEPT preferred FDD band plan. African countries that are unable to make available 790-862 MHz band, or wish to make available spectrum below 790 MHz, are recommended to use the Region 3 optimised "2 x 45 MHz" conventional FDD band plan in 698 to 806 MHz.