Position paper for Africa on Digital Dividend/UHF band plans

African countries are considering the policy options which will rapidly and effectively extend broadband service availability. Lessons from the successful development of voice and SMS in Africa are clear. Success has been greatest where regulators have:

- Allocated sufficient spectrum to competing mobile operators to support voice demand; and
- Otherwise been non-interventionist, relying on competitive ecosystems.

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 spectrum below 1GHz, in non-fragmented allocations.** These spectrum allocations should be aligned regionally and internationally where possible.

The GSMA is in favour of the harmonisation of frequency bands used for mobile broadband services in the UHF band. Such harmonisation helps to reduce the cost of terminals for consumers. GSMA studies have shown that spectrum fragmentation can significantly increase the costs of ownership to consumers, and that developing markets are particularly sensitive to such costs.

Internationally the GSMA supports four band plan options for UHF, namely[1] :

1. CEPT band plan (790 to 862 MHz);
2. The optimised 2 x 50 MHz option (698 to 806 MHz);
3. US band plan (698 to 806 MHz); and
4. The optimised US option (696 to 806 MHz).

The 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 an obvious choice. This choice 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 696/698 MHz band plan may be better suited to national market conditions. For example, if there is widespread use of part of the CEPT band for existing mobile services (using the "850 MHz" bands[2]). Similarly, if the national use of the bands below 790 MHz for broadcasting is limited, it may be possible to release more spectrum overall, by using a different option. Another factor to consider is the plans of

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[1] See Annex 1 for a definition of these band plans

[2] Mobile systems operating in bands 824 – 849 MHz paired with 869 – 894 MHz.

immediate neighbours. If a “cluster” of immediate neighbours is to adopt one plan, then it may make sense to follow that option (if all other things are equal). Such “clustering” could help with managing cross border interference , and with roaming between those countries, but would complicate cross border issues with other Region 1 countries who adopt the CEPT channel plan.

The need for broadband in Africa is very clear; to help stimulate economic development and allow African citizens to participate in the global knowledge based economy. Optimisation of the use of the UHF band is important for ensuring the widest geographical coverage of broadband via mobile. This means that band plans in Africa that maximise the amount of available spectrum, could offer a significant extra benefit to African countries. However such band plans must be harmonised to ensure economies of scale, which are vital for reducing the cost of ownership to consumers. African markets are particularly price sensitive.

Countries that wish to follow the ITU Region 1 identification for 790 to 862 MHz, are recommended to follow the CEPT band plan. Countries that are unable to make available 790 to 862 MHz, or wish to make available 696/698 to 806 MHz, are recommended to adopt bands plans such as 2 or 4.

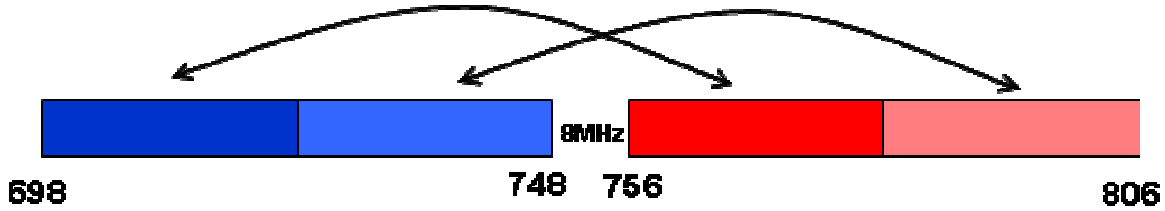
Annex 1

Option 1: CEPT (Preferred) – 2 x 30 MHz

791-796	796-801	801-806	806-811	811-816	816-821	821 - 832	832-837	837-842	842-847	847-852	852-857	857-862
Downlink						**Duplex gap**	**Uplink**					
30 MHz (6 blocks of 5 MHz)						11 MHz	30 MHz (6 blocks of 5 MHz)					

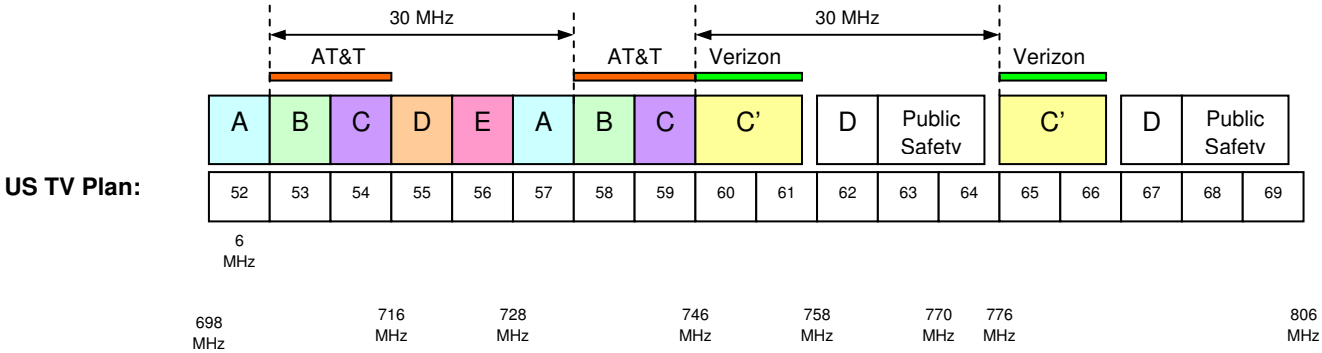
Preferred CEPT Draft Band Plan : Source: DRAFT ECC/DEC/(09)EE - www.ero.dk[3] (Oct. 09)

Option 2: Optimised 2 x 50 MHz - APT[4]



Optimised 2 x 50 MHz plan *: Note that duplex direction is to be determined*

Option 3: US Band Plan (ie used in the US)



AT&T : 704 – 716 MHz (uplink), paired with 734 – 746 MHz (downlink)

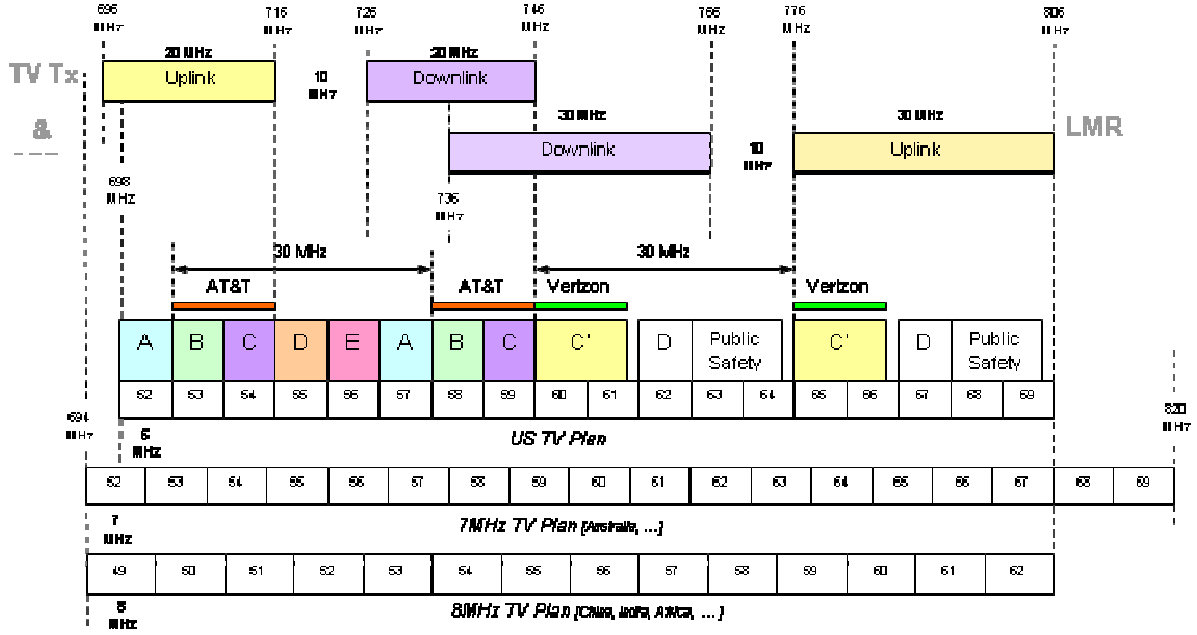
Verizon : 746 – 757 MHz (downlink), paired with 776 – 787 MHz (uplink)

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[3] http://www.ero.dk/07146D6C-BA37-4453-A979-BE63EE2FD852?frames=no&

[4] See AWF-7/OUT-21 for background discussion – available at http://www.apt.int

Option 4: Optimised US Band Plan (2 x 40 MHz) - APT[5]



696 – 716 MHz (uplink) paired with 726 – 746 MHz (downlink)

736 – 766 MHz (downlink) paired with 776 – 806 MHz (uplink)

Note: 10 MHz of overlap on downlinks.

[5] See AWF-7/OUT-21 for background discussion