

Harmonising the 700MHz band in Region 1: Europe and MEA must overcome their different viewpoints

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Analysys Mason previously wrote an insightful article highlighting the options for the 700MHz band in Europe. One important consideration that we want to highlight here is that the Middle East and Africa (MEA) may be inclined to adopt different options than Europe, even though both are part of the same ITU-R Region 1.

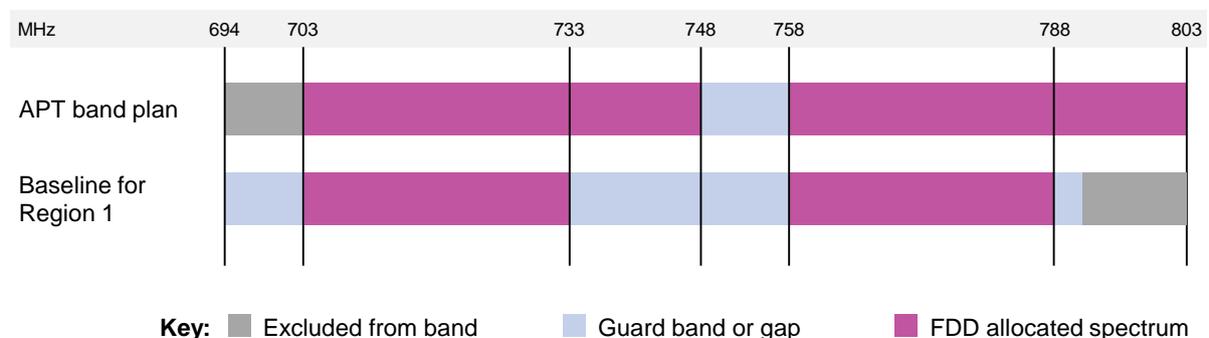
Key differences between Europe and MEA may justify an interest in different band plans

Two factors in particular are driving an interest in different band plans in Region 1.

- The role of terrestrial TV:** Terrestrial TV uses substantially more spectrum in Europe, but more importantly has a much higher viewership in Europe than in MEA. As a result, terrestrial broadcasting has a greater weight and is a real political concern in Europe – not so much in MEA.
- The need for mobile spectrum:** Unlike in Europe, where fixed telecoms infrastructure is omnipresent, mobile is generally the main infrastructure in MEA, which therefore requires more mobile spectrum. In addition, the potential for demand growth is extremely high in MEA. Finally, in most of Europe, the 800MHz spectrum is already in use, whereas many African countries still are to release and allocate that spectrum.

Across ITU-R Region 1, one key conclusion finally seems to emerge unanimously after several years of discussion: the band plan in Region 1 needs to have some alignment with the APT700 band. The 2x30MHz lower duplexer of the APT700 band plan should be the ‘baseline plan’ for the Region 1 band (see Figure 1). By having such an alignment with the APT band plan, we can expect some compatibility between handsets across Region 1 and Region 3.

Figure 1: The APT 700MHz band plan and baseline plan for Region 1 [Source: Analysys Mason, 2014]



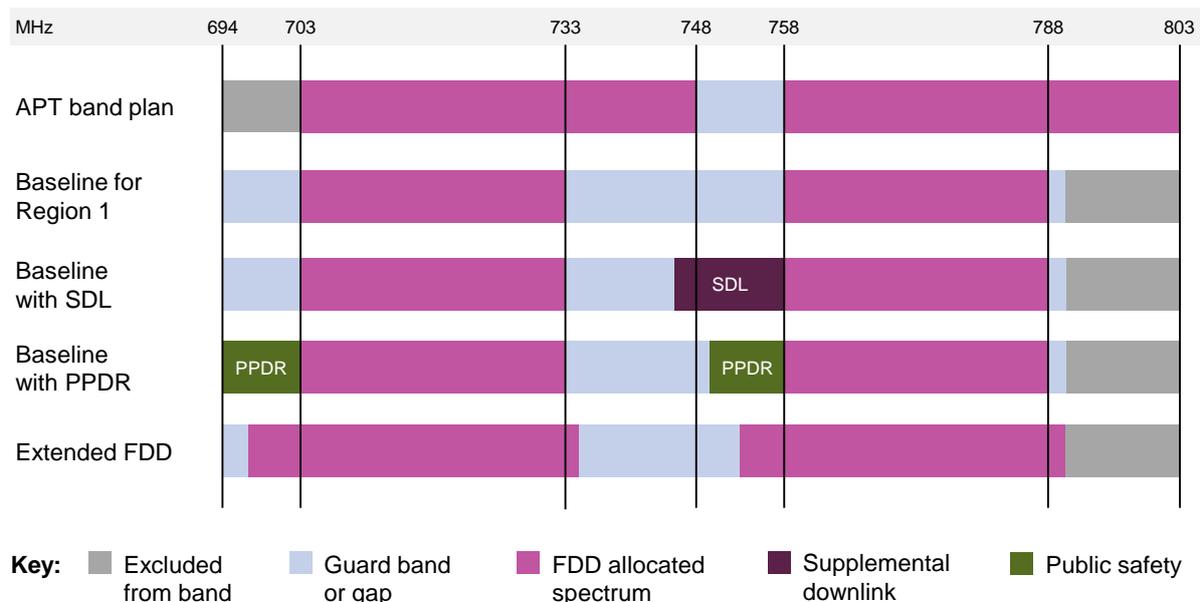
The UAE issued a decision in 2013 along the baseline plan as shown above. Similarly, several European countries, the Arab Spectrum Management Group and several African countries (for example, Kenya and South Africa) have confirmed interest in using similar band plans.

Band plan extensions and out-of-band emissions could still present challenges for harmonisation

Two further issues are fuelling debate between Europe and MEA, and could still lead to lack of harmonisation within Region 1.

- Extension of the band plan:** The baseline plan leaves a 25 MHz gap, which both Europe and MEA would like to reduce. Large operator groups in Region 1 are discussing whether the gap should be used for supplemental downlink (SDL) or public protection and disaster relief (PPDR) – that is, public safety. Others are suggesting that the FDD band be extended slightly (upwards and downwards), ideally to achieve an overall increase of 2×10 MHz in useable spectrum. Figure 2 illustrates the various propositions discussed.

Figure 2: The APT 700MHz band plan and variations of the baseline plan for Region 1 [Source: Analysys Mason, 2014]



- Out-of-band emissions (OOBE):**¹ Even if we assume an agreement is reached on the band plan, the MEA region will have to decide whether to align with the APT threshold for OOBE (-25 dBm/8MHz) or CEPT's threshold for Europe (-42 dBm/8MHz). CEPT recently defined this significantly more-stringent OOBE threshold to ensure interference risks between DTT and mobile are kept to an absolute minimum. However, MEA may be tempted to adopt the APT threshold, which would ensure that both APT700 and CEPT700 handsets are allowed to operate in the MEA region, while still keeping the risk of interference between mobile and DTT relatively low. However, this would result in complexity in the testing and certification processes for handsets across Region 1.

¹ The OOBE threshold is the restriction imposed on user equipment and network devices to prevent unwanted emissions in neighbouring bands.

Region 1 will yield the full benefits of harmonisation – that is, the economies of scale achieved by producing devices for a whole zone currently covering 2.2 billion people and 1.2 billion unique mobile users – only if both the band plan and the OOB threshold are agreed.

Operators and other stakeholders need to ensure their voice is heard in the debate because each option may have different impacts from one country to the next. Moreover, policy and government leaders should continue to value and acknowledge the importance of finding an agreement on a harmonised band plan – including a common OOB in Region 1 – for the greater interest of the consumers and the industry.

Analysys Mason can help operators, regulators and other stakeholders to understand the business impacts and form their opinion on a wide range of spectrum-related issues.