Applying the European 5G Action Plan to MEA will require adjustments to local spectrum frameworks

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The European Union (EU) approved the 5G Action Plan in September 2016. This plan, which was further refined by the European Radio Spectrum Policy Group, highlights several "pioneer" spectrum bands (700MHz and 3.4–3.8GHz), and many options for spectrum above 6GHz ('millimetre wave').

The EU's 5G Action Plan may be difficult to follow in the Middle East and Africa

The Middle East and Africa (MEA) region is part of the same ITU-R region as Europe (Region 1), so it is worth considering whether MEA will be able to follow Europe's 5G plan, which could help to ensure harmonisation across the region. We have assessed the applicability of these recommendations for MEA, and have identified several issues relating to the proposed pioneer spectrum, which are explained in more detail below.

- **700MHz band for sub-1GHz spectrum** – many countries in MEA have not freed this band, largely because it is being used by terrestrial TV and/or other applications (for example, military use).
- **3.4–3.8GHz band for the 1–6GHz spectrum** –WiMAX networks (licensed to fixed–wireless operators rather than mobile network operators (MNOs)), sometimes upgraded to LTE TDD, remain in 3.4–3.6GHz bands in MEA. In addition, it is necessary when planning for terrestrial use in the 3.6–3.8GHz band to take account of use of this band by C-band satellite services.
- **Spectrum above 6GHz** – it is still unclear whether 24GHz, 26GHz or much higher (such as 40.5–43.5GHz) bands will be preferred.

Regulators, policy makers and operators in MEA must address these issues if they are to enable the economic potential of 5G

If the 700MHz band is to form part of an early 5G vision in MEA, it will be necessary for regulators and governments to release the band from its current uses. Several countries have been through the digital TV switchover (for example, Saudi Arabia, UAE, etc.), which should have freed 700MHz spectrum from terrestrial TV transmissions, unless it was used by other government services. The band was allocated to mobile (IMT) and assigned to mobile operators in Egypt and the UAE in 2016, and this is being done in Oman and Saudi Arabia in 2017. However, this spectrum will need to be assigned to operators on a wider basis, if the internationally determined plans for the use of 700MHz spectrum are to be harmonised. Ideally, licensing should happen early enough to facilitate both 5G trials and the large-scale deployment of equipment (such as base stations) in that band. In addition, this spectrum should be awarded on the basis of technology neutrality, so that 700MHz spectrum can be deployed to support 4G services and then switched to 5G when required.

It is important to differentiate between the two parts of the 3.5GHz band.

- For **the lower part (3.4–3.6GHz)**, where the spectrum has been awarded to licensees restricted to fixed–wireless services (for example, in Bahrain, Saudi Arabia and Kuwait), there needs to be a fundamental review of the licensing framework for this band, if it is to be a key band for early 5G deployment. Considerations would include assessment of the terms under which the current licences have been assigned (for example, bandwidths licensed, configuration of spectrum), and a review of the overall market framework for wireless broadband and mobile services (for example, to consider whether fixed–wireless players could become mobile players, for example such as in Saudi Arabia with a unified licensing framework) or whether some other approach is needed to provide assignments configured in the most suitable form for mobile use and that are expected to be particularly valuable in the 5G era.
- For **the upper part (3.6–3.8GHz)**, which is essential for C-band satellite operations, there needs to be an assessment of the utilisation of the band followed by an investigation into the feasibility of introducing mobile services into some or all of the band, complemented by licensed spectrum sharing studies (for example, satellite could continue to be the primary user of the band, while IMT could be a secondary user). Because the issue is relatively similar to the one in EU, regulators in the region should also monitor the related investigations being conducted in Europe on the matter. There are various uses of the 3.6–3.8GHz band in the EU and some countries use it for terrestrial fixed links as well as for C-band earth stations. Individual circumstances vary between countries. Some countries have higher concentrations of earth stations than other, so sharing prospects will vary.

For millimetre-wave spectrum, regulators need to assess the uses of the various possible pioneer bands, follow and influence the discussions held at regional level on the choice of these bands for early 5G deployment. This is important, given that decisions on IMT designations of spectrum in millimetre-wave bands will be considered at the ITU World Radiocommunication Conference in 2019 (WRC-19).

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, including the development of 5G. To find out more about our spectrum policy and auction support and our Middle East expertise, please contact Johann Adjovi, Mark Colville or Janette Stewart.