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Perspectives on Malaysia Mobile Broadband Development 2020

This academic research whitepaper is prepared by

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EXECUTIVE SUMMARY

As the mobile broadband (MBB) becoming a vital technology in our daily social life, studies and surveys have shown that the MBB data traffics will drastically surge in the next few years. As a consequence, it is very beneficial to understand the current MBB performances in Malaysia such that relevant bodies and agencies can layout plans for sustaining or even refining the current MBB services in Malaysia. The initial step towards this goal is to estimate the exact growth demand for future MBB services in Malaysia and consequently to come out with plans and policies on how to sustain and accelerate the deployment of MBB technology in future. This whitepaper comprehensively covers these important perspectives of MBB services in Malaysia.

The first part of the whitepaper presents the findings on the current MBB performances of 4G and 3G mobile networks for five morphologies (dense urban, urban, suburban, rural and indoor) in Malaysia. The results cover four MBB performance metrics: coverage, latency, speed and satisfaction for two types of services, web browsing and video streaming. The measurement data to characterize and analyze the MBB performances are gathered by WCC between January and February 2016 using Samsung Galaxy S6 smartphone handsets, on three Malaysian mobile network operators (MNOs) conducted in Klang Valley (KV) and Selangor; Johor; Sarawak; and Sabah. This MBB research project is conducted, with the intention to understand the current MBB performance and the actual user MBB experience in Malaysia.

The second part of the whitepaper presents the forecasted spectrum need in Malaysia by 2020. To obtain this value, a new spectrum forecasting model is developed by WCC. The developed model uses five main input metrics: the Current Available Spectrum (CAS), the Site Number Growth (SNG), the Data Traffic Growth (DTG), the Average Network Utilization (ANU) and the Spectrum Efficiency Growth (SEG). The value of each input metric is generated by utilizing statistical information gathered from sources like Malaysian Communications and Multimedia Commission (MCMC), OpenSignal, Analysys Mason report and GSMA. When using our model, MBB in Malaysia needs around 307 MHz additional spectrum to fulfill the increased MBB data traffic demands by 2020. This forecasting is based on the input data of the four major MNOs in Malaysia, which account for approximately 95% of local mobile market share.

From the forecasted figure of 307 MHz additional spectrum needed for MBB in Malaysia by 2020. The third part of the whitepaper layout plans on how this spectrum requirement can be partly fulfilled by considering other spectrum bands available. By carefully examining the WRC-15 identified bands, 130 MHz, i.e. 90 MHz from 700 MHz band and 40 MHz from 1400 MHz band, are forecasted to be available to the Malaysian MBB industry in year 2020. This implies additional policies such as the proposed action items as listed below would be recommended in parallel, in order to meet the data demand and resolve the spectrum crunch challenges.

The final part of the whitepaper discusses several policy recommendations that could help to accelerate the MBB service deployment. Seven recommended policies are concisely discussed and presented.

1. Speed Up Allocation of More Spectrum for MBB Services
2. Incentives from Government to boost MBB Industry Development
3. Government & Stakeholders Jointly Strategize to Achieve Targeted KPI for National MBB Service
4. Wireless Broadband to complement Fixed Broadband in National Broadband Development
5. Network Densification at High Capacity Demand Areas
   - Open Access to Publicly Funded Infrastructure for Base Station Siting
   - Consortium and Policies to Accelerate Indoor Base Station Deployment
6. Network Infrastructure Sharing
7. Improving capacity with unlicensed spectrum using License Assisted Access (LAA) Technology