

UNIVERSITI TEKNOLOGI MARA

**ANALYSIS OF CELCOM 3G AND 4G
NETWORK IMPROVEMENTS
AFTER SWAP AND
MODERNIZATION APPROACH**

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ABSTRACT

The increasing number of customers and the need for reliable communication require the availability of coverage, sufficient capacity and good quality of mobile communications networks. New Base Transceiver System (BTS) implementation is required to cover a wider area with good network quality. Thus this study analyzes the improvement of 3G and 4G network after swap and modernization approach. The aim of this study is to improve the quality and coverage of Celcom services after swap and modernization approach using new network architecture which is Single Radio Access Network (RAN). There are three objectives involved in this study which are 1) to identify problems encountered using previous network architecture which is Separate RAN, 2) to improve the parameters in network coverage using drive test method and 3) to evaluate on the improvement of mobile network performance after using the new network architecture which is Single RAN. Quantitative approach has been used in this study in terms of data collection through drive test method. It allows data collection from logfiles and assessed it to improve the KPI parameters of the network. The result of the study after swap and modernization approach is the enhancements of parameters performance have improved the quality for cluster N011 Celcom within Kepong area using new network architecture of Single RAN and equipment replacement. However not much improvement can be seen in terms of capacity. Thus process of details optimization by vendors need to be done to ensure that the network coverage and performance per cluster is better or meeting the requirement as per agreed with Celcom.

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