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## ABSTRACT

Single Radio Access Network (RAN) is the Radio equipment which consists of Base Band Unit (BBU) as a main processor, Remote Radio Unit (RRU) and antenna for enabling Global System for Mobile Communication (GSM), Universal Mobile Telecommunication System (UMTS) and Long Term Evolution (LTE) in the same platform. In the past of 5 years, operators in Malaysia using separate radio equipment for different technologies. This caused big impact on the Capital Expenditure (CAPEX) and Operational Expenditure (OPEX) to the operators to manage and maintain their network. By having single RAN, operators automatically reduce their CAPEX and OPEX for every year to manage and maintain the radio equipment. The performance of the single RAN was studied in terms of coverage and quality compared to conventional radio. The specific tools which is called Nemo Outdoor is used to measure the coverage, quality and throughput via drive test. Important parameter and data captured are being process using Nemo Analyze and MapInfo Professional. It is proven that single RAN not only helps reducing investment but it is also improve network for coverage and quality compare with conventional radio.

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