

ABSTRACT

Along with rapid technological advances and the need for better network services. The development of 5G network technology has arrived in Indonesia, this technology presents an increase in network quality. 5G New Radio (NR) is a wireless standard that will become the next generation of mobile networks. The development of 5G NR itself is part of the continuous mobile broadband development process to meet the 5G requirements as described by IMT (International Mobile Telecommunication) in 2020, similar to the development of 3G and 4G wireless technologies.

Royal Plaza is the most complete shopping center with a very strategic location, which is in the middle of the city. Established on an area of 4 hectares and started operating on October 7th 2006, it has an area with a clean floor of around 68,000 m². The average number of mall visitors per day reaches 25.000 people and doubles on weekends. When in the Food Court area the author often experiences poor signal on cellular networks caused by attenuation of building partitions. The author wants to design a 5G Indoor network at Royal Plaza to reach shopping centers to support internet needs.

In this study, the authors focused on one of the shopping centers in Surabaya, namely Royal Plaza Surabaya. The survey will be conducted on every floor covering Floor 1 to Floor 3. Planning for the design of this indoor 5G network will use the Middle Band frequency range, namely 2,3 GHz. It is hoped that this research and network design will be useful for visitors, bazaar stand owners, restaurants, and all shops in the shopping center.

Keywords: *5G New Radio, 5G Indoor, 2,3 GHz Frequency, Provider, Shopping Center*