

State of Libya
Ministry of Education
Al Asmarya Islamic University Faculty of Engineering

Long Term Evolution (LTE) Cell Planning Case of Study in Zliten City

This graduation project is submitted to Al Asmarya Islamic University in partial fulfillment of the requirements of the award of bachelor's degree in Electrical and Computer Engineering Communication Engineering

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ABSTRACT

Due to the increasing demand for internet services and the low demand for traditional telephone services. In the first quarter of 2017 Libyan Telecom Operators started to provide Long Term Evolution (LTE) services to users at high speeds, to ensure the quality of service (QoS) that required, the cell planning process must be carried out accurately and efficiently in line with high demand levels, where the cell planning is the first and most important process before starting to install LTE networks.

This project studied cell planning for LTE networks according to coverage and capacity requirement, then designed a software tool that summarizes the process of cell planning and helps engineers to install LTE networks and make the initial cell planning easy and fast. This tool will analyze the input data and calculates the number of evolved NodeB (eNodeB) needed to achieve the required QoS.

After completing the initial cell planning process, the LTE network was simulated in Zliten city by using (Atoll Radio planning software), and optimizing the signal quality and internet speed to cover all the city and obtain high quality key Performance Indicators (KPIs) and to ensure the best service for users QoS.