

ContainerPower Energy Solutions

Abkhazia outdoor 5G base station



Overview

Can 5G cellular network planning be used in urban outdoor areas?

Overall, the results of the sensitivity analysis and performance evaluation indicate that the optimization model that we developed in this study is a useful tool for generating alternatives for 5G cellular network planning in urban outdoor areas. Nevertheless, some limitations still exist in this study.

Should 5G base stations be tripled?

To cover the same area as traditional cellular networks (2G, 3G, and 4G), the number of 5G base stations (BSs) could be tripled (Wang et al., 2014). Furthermore, Ge, Tu, Mao, Wang, and Han, (2016) suggested that to achieve seamless coverage services, the density of 5G BSs would reach 40-50 BSs/km².

What is the location optimization approach for 5G BS?

The location optimization approach for 5G BSs aims to cover the service demand area with the minimum number of BSs or to maximize the service coverage area of a given number of BSs. To solve this typical coverage problem, an MCLP model was employed for the location optimization of 5G BSs.

What is the coverage radii of 5G BS?

Most of the service/coverage radii of 5G BSs are between 100 and 300 meters (Maccartney, Zhang, Nie, & Rappaport, 2013; Sulyman et al., 2014). In addition, the densely distributed buildings in urban areas limit the propagation and coverage of 5G signals.

What is the effective service coverage radius of a 5G BS?

In addition, we assumed that the effective service coverage radius of each 5G BS was 200 meters (Palizban et al., 2017). The service coverage and the optimal BS deployment solutions that we obtained are shown in Fig. 5, Fig. 6,

respectively. Fig. 5. Optimal service coverage for different numbers of BSs in the study area. Fig. 6.

What is a 5G NSA deployment?

The first rollout of 5G networks usually involves NSA deployments that can help telecom operators maximize the use of installed 4G BSs, be the first to launch 5G, and gain technology and market leadership (Ekstrom, 2019).

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