

# **Communication query nearby 5G base stations**





## Overview

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Therefore, every node can communicate with nearby base stations directly. In this paper, with the help of 5G infrastructure, we propose a Query-Driven Clustering (QDC) protocol to enhance the energy.

What is a 5G base station?

In 5G network, base stations are deployed with high density. The average distance between base stations is about 300 m in urban areas, and it is about 1000–2000 m in suburban and rural areas. In comparison, the transmission radius of sensor nodes exceeds 2000 m with technological advances in wireless communication technology.

How to optimize base station deployment in 5G wireless networks?

In previous research on 5G wireless networks, the optimization of base station deployment primarily relied on human expertise, simulation software, and algorithmic optimization.

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/km<sup>2</sup>.

How can a 5G cellular network be developed?

The developed model can facilitate the rollout of 5G technology. Due to the high propagation loss and blockage-sensitive characteristics of millimeter waves (mmWaves), constructing fifth-generation (5G) cellular networks involves deploying ultra-dense base stations (BSs) to achieve satisfactory communication service coverage.



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Qi Wang et al. [5] address challenges in urban 5G network deployment, emphasizing issues with millimeter wave signals. The main challenge is deploying an ultra ...

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[Site Planning For 5G Communication Base Stations ...](#)

Therefore, this proposes a 5G base station planning model based on the idea of the binary mask, combining differential evolution algorithm and Monte Carlo simulation to fully consider the ...

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[Optimization of 5G base station deployment based on...](#)

The human expertise method is typically suited for the initial stages of deployment, considering factors such as user density and utilizing existing 4 G base station infrastructure ...

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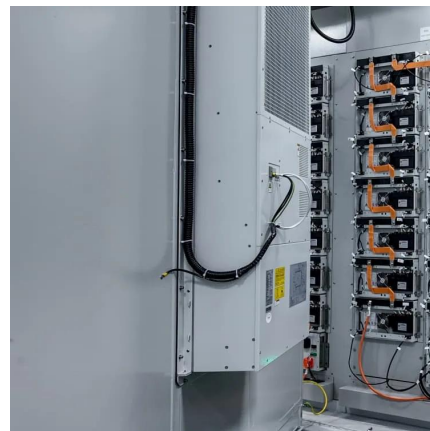
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1. Introduction Recently, with the rapid development of wireless communication technology, the enhancement of wireless network performance is concerned with meeting the ...

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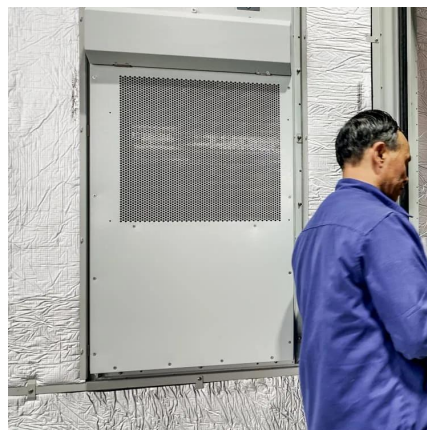


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