

# **Can the introduction of D2D communication in cellular networks reduce the burden on base stations**





## Overview

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What are the advantages of D2D communication in cellular networks?

Optimization of Power Levels: since D2D links exist between proximate devices, over a small distance, transmission power is less. This enhances the battery life of the devices. As a result, higher energy efficiency can be achieved with D2D communication in cellular networks. 4.

What is the difference between D2D and conventional cellular communication?

Conventional cellular communication is supported by the macro cell tier, while D2D communication is supported by the device tier. These cellular networks thus are similar to the existing networks. The difference lies in the fact that faithful services can be achieved by the devices at the cell edges and those in the congested areas within the cell.

What is interference management in D2D communication?

As a result, interference management is possible with the help of a central controlling entity in the cellular network (the base station). With D2D communication underlying cellular networks, direct transmission between devices is possible in the licensed spectrum.

What is D2D communication?

Such a technique is essential for fulfilling the chief goals of the mobile network operators (MNOs). D2D communication allows communication between two devices, without the participation of the Base Station (BS), or the evolved NodeB (eNB). Proximate devices can directly communicate with each other by establishing direct links.



## Can the introduction of D2D communication in cellular networks re...



### [Device-to-Device Communication in Cellular Networks: A ...](#)

Aug 1, 2016 · A number of features of 5G networks can be integrated with device-to-device (D2D) communication (Fig. 8.), which acts as an enabler for D2D communication in the existing ...

### [Device-to-Device Communication in Cellular Networks:](#)

May 29, 2013 · D2D communication allows communication between two devices, without the participation of the Base Station (BS), or the evolved NodeB (eNB). Proximate devices can ...



### [The Analysis of Device-to-Device \(D2D\) Communication ...](#)

May 2, 2025 · In contrast to traditional cellular connection, device-to-device (D2D) communication is a direct connection amidst adjacent mobile users that does not pass through the base ...

### **Performance analysis of D2D cooperative networks based on ...**

Dec 14, 2024 · Based on the introduction of Device-to-Device (D2D) assisted communication in cellular networks, this paper proposes a probabilistic relay forwarding mechanism, which



uses ...



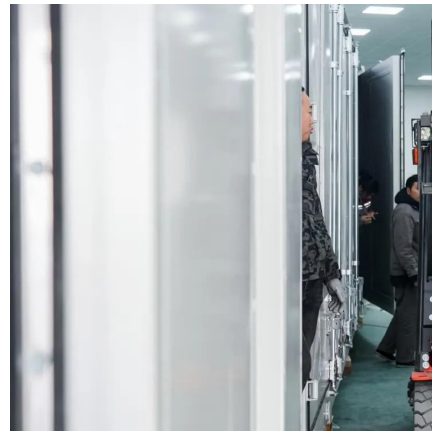
### [Device-to-Device Communication in 5G/6G: Architectural ...](#)

Jul 9, 2025 · Abstract Device-to-Device (D2D) communication is a promising solution to meet the growing demands of 5G and future 6G networks by enabling direct communication between ...

### [\(PDF\) A Comprehensive Review of D2D ...](#)

...

Oct 1, 2023 · The evolution of Device-to-device (D2D) communication represents a significant breakthrough within the realm of mobile ...



### **Deep Reinforcement Learning-Based Optimization Method for D2D**

Sep 25, 2024 · Given the context of the challenge of exponentially increasing data traffic on communication networks brought by the 5G era, this paper focuses on how to apply deep ...





## A primer on design aspects, recent advances, and challenges in cellular

Nov 1, 2019 · Device-to-Device (D2D) communication coexisting with cellular networks is attracting a lot of attention in academia and industry nowadays. This is due to its potential to ...

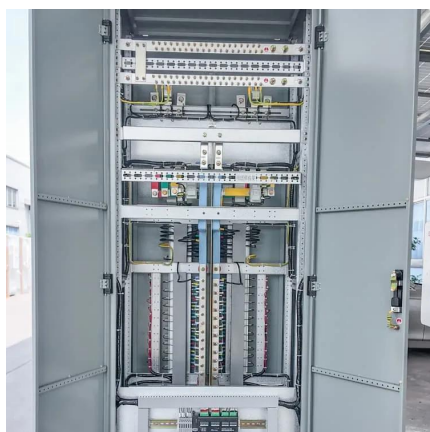


## An overview of device-to-device communication in cellular networks

Dec 1, 2018 · Cellular network is now four generations old. Need for fast multimedia-rich data exchange along with high quality voice calls has been the primary motivation in this forward ...

## (PDF) A Comprehensive Review of D2D Communication in 5G and B5G Networks

Oct 1, 2023 · The evolution of Device-to-device (D2D) communication represents a significant breakthrough within the realm of mobile technology, particularly in the context of 5G and ...



## [Energy-Efficient Device-to-Device Communication in ...](#)

Jan 16, 2018 · Abstract--Device-to-Device (D2D) communication is expected to satisfy the rapidly increasing capacity, and it can also alleviate the burden of base stations (BSs) by offloading ...



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