Introducing D2D communication into cellular networks can reduce the burden on base stations

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What are the applications of D2D communication in cellular networks?
Fig. 6 illustrates some key applications of D2D communication in cellular networks. One of the most compelling advantages of device-to-device (D2D) communication is its ability to significantly enhance SE and overall system throughput through localized spectrum reuse.

Will D2D communication increase cellular capacity?
Introducing D2D communication to cellular users (CUs) will increase system capacity,and CUs will provide reusable channel resources for D2D users (DUs). However,the sharing of channel resources between CUs and DUs will lead to cofrequency interference and affect the communication quality of user terminals.

What is D2D communication?
D2D communication naturally complements many of the advanced physical layer technologies envisioned for 5G and 6G networks. When integrated with massive MIMO, D2D allows the spatial degrees of freedom (DoF s) to be more efficiently utilized by enabling simultaneous transmission without severely impacting the cellular users.

What are the three scenarios for D2D communication?
Three scenarios for D2D communication are considered: (1) all UEs involved in D2D communication are within network coverage, (2) only some of the UEs in D2D communication are within network coverage, and (3) none of the UEs in D2D communication are within network coverage.

This paper provides an intensive benchmarking of the integration of D2D communication into cellular network focusing on the potential advantages, different recent prototypes, classifications, and ...

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 user devices. It ...

Device-to-Device (D2D) communication has emerged as a promising solution for improving spectrum

utilization in next generation cellular networks. Efficient utilization of available ...

Integrating device-to-device (D2D) communication into cellular networks can significantly reduce the transmission burden on base stations (BSs). Besides, integrated sensing and communication (ISAC) ...

Explore the benefits and challenges of Device-to-Device (D2D) communication in LTE and 5G NR, including latency, coverage, and security considerations.

D2D communication is a new paradigm in cellular networks [1]. It allows user equipments (UEs) in close proximity to communicate using a direct link rather than having their radio signal travel ...

By offloading traffic from the core network, D2D communication increases network capacity and reduces the burden on cellular infrastructure. This is particularly useful in densely populated areas where ...

Since cellular users transmit less power than base stations, they generate less interference, and base stations are better able to handle interference. Therefore, this work mainly ...

By offloading traffic from the core network, D2D communication increases network capacity and reduces the burden on cellular infrastructure. This is particularly useful in densely populated areas where network congestion is a common issue.

Device-to-device (D2D) communication in cellular networks represents a paradigm shift wherein mobile devices communicate directly with one another, bypassing traditional base station...

This is the use of D2D communication as an extension to increase the base station coverage of a network. In this kind of D2D communication, devices that are not within the base station coverage ...

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