

Device-to-Device Communication in 5G Networks

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Abstract: *Device-to-device communication produces a new dimension in the mobile environment, easing the data exchange process between physically neighboring devices. 5G wireless networks are expected to carry large traffic volumes due to the growth of mobile devices and the increasing demand for high data rates from applications. Device to device communication is one of the suggested technologies to support this increasing load and enhance the capacity of networks. However, the implementation of D2D communication reveals many barriers that include communication scheduling, for which the architecture remains complex and obscure. The mobile operator's action to collect the short-range communications for maintenance of the proximity-based services and improve the performance of networks drives the development of D2D. Through direct communication, device-to-device technology can increase the overall throughput, enhance the coverage, and reduce the power consumption of cellular communications. There are popular low-level D2D techniques available for short-range wireless transmissions, such as Bluetooth and WiFi-Direct, and typically they use license-exempt bands. Most of the cellular technologies, however, do not support direct over-the-air communication between end users.*

Keywords: 5G Networks

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