

# 5G NR: The Next Generation of Wireless Access Technology

5G NR (New Radio) is the next generation of wireless access technology that will provide faster speeds, lower latency, and increased capacity. It is designed to meet the growing demands of mobile data traffic, which is expected to increase by 1000 times over the next 10 years.

5G NR uses a new radio interface called OFDM (Orthogonal Frequency Division Multiplexing), which is more efficient than the current LTE (Long Term Evolution) technology. OFDM divides the available spectrum into multiple subcarriers, which can be used to transmit data in parallel. This allows 5G NR to achieve much higher speeds than LTE.

In addition to OFDM, 5G NR also uses a number of other new technologies, such as massive MIMO (Multiple-Input Multiple-Output) and beamforming. Massive MIMO uses multiple antennas to transmit and receive data, which can significantly increase the capacity of a network. Beamforming focuses the signal in a specific direction, which can improve the signal strength and reduce interference.



## 5G NR: The Next Generation Wireless Access Technology by Erik Dahlman

★★★★☆ 4.1 out of 5

Language : English  
File size : 23808 KB  
Text-to-Speech : Enabled  
Screen Reader : Supported  
Enhanced typesetting : Enabled  
Print length : 466 pages



5G NR is expected to be deployed in a number of different ways, including:

- **Standalone 5G:** This is a new type of network that is not dependent on LTE. Standalone 5G networks will be able to provide the full range of 5G NR benefits, including faster speeds, lower latency, and increased capacity.
- **Non-standalone 5G:** This is a type of network that uses LTE as a foundation. Non-standalone 5G networks will be able to provide some of the benefits of 5G NR, but they will not be as fast or as capable as standalone 5G networks.
- **LTE-Advanced Pro:** This is a new version of LTE that is designed to support some of the features of 5G NR. LTE-Advanced Pro networks will be able to provide faster speeds and lower latency than current LTE networks, but they will not be as fast or as capable as standalone 5G networks.

The deployment of 5G NR is expected to begin in 2020. By 2025, 5G NR is expected to be widely available in most major cities around the world.

## Benefits of 5G NR

5G NR offers a number of benefits over current wireless access technologies, including:

- **Faster speeds:** 5G NR is capable of providing speeds of up to 10 gigabits per second (Gbps). This is much faster than the current LTE

technology, which has a maximum speed of 1 Gbps.

- **Lower latency:** 5G NR has a latency of less than 1 millisecond. This is much lower than the current LTE technology, which has a latency of around 50 milliseconds.
- **Increased capacity:** 5G NR is capable of supporting up to 10 times more devices than current LTE technology. This will help to meet the growing demand for mobile data traffic.
- **Improved coverage:** 5G NR uses higher frequency bands than current LTE technology. This will help to improve coverage in rural areas and other areas where LTE coverage is weak.

## Applications of 5G NR

5G NR will have a wide range of applications, including:

- **Mobile broadband:** 5G NR will provide the speeds and capacity needed to support new mobile broadband applications, such as virtual reality (VR) and augmented reality (AR).
- **IoT:** 5G NR will provide the low latency and high capacity needed to support IoT applications, such as smart cities and connected cars.
- **Industrial automation:** 5G NR will provide the reliability and security needed to support industrial automation applications, such as remote control of robots and machines.
- **Healthcare:** 5G NR will provide the speeds and capacity needed to support healthcare applications, such as telemedicine and remote surgery.

- **Transportation:** 5G NR will provide the speeds and capacity needed to support transportation applications, such as self-driving cars and connected vehicles.
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5G NR is the next generation of wireless access technology that will provide faster speeds, lower latency, and increased capacity. It is expected to revolutionize the way we live, work, and play.

### **Image Descriptions and SEO Keywords**

**Image 1:** A photo of a 5G NR base station.

**Alt text:** A 5G NR base station is a device that transmits and receives 5G NR signals.

**SEO keywords:** 5G NR, base station, wireless access technology

**Image 2:** A graph showing the growth of mobile data traffic.

**Alt text:** Mobile data traffic is expected to increase by 1000 times over the next 10 years.

**SEO keywords:** Mobile data traffic, growth, 5G NR

**Image 3:** A photo of a person using a 5G NR smartphone.

**Alt text:** A person is using a 5G NR smartphone to download a video.

**SEO keywords:** 5G NR, smartphone, download, video

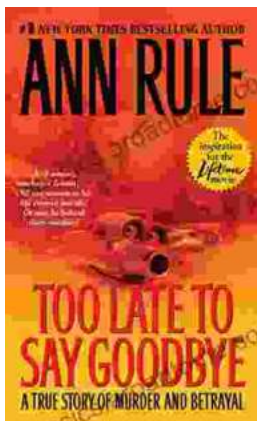


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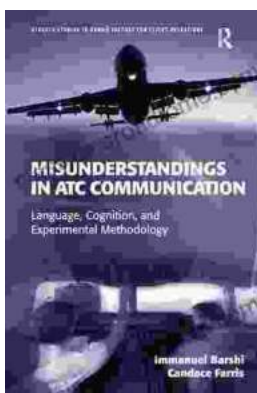
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