5G NR Air Interface Overview - Part II

5G_102Bd | On-Demand | 5G Access | Express
Course Duration: 1 hour

5G promises to enable a variety of new services, ranging from high-speed, high-capacity broadband access to ultra reliable low-latency communications to massive machine-type communications. To deliver on these promises, the wireless network must change, including the devices, the radio interface, the radio access network (RAN), and the core network. Part I of this self-paced course offers a high-level technical overview of 5G NR (New Radio) air interface. Part II covers the flexible numerologies, channels and frame/slot structure, and steps through the life of a 5G UE, concluding with how the technologies and standards converge to meet the performance goals set for 5G.

Intended Audience

This course is designed for a broad audience of wireless network engineers. This includes those in RF, RAN planning, engineering, operations, troubleshooting and support groups.

Objectives

After completing this course, the student will be able to:

- Identify key channels and their usage in the downlink and uplink
- Step through the life of a 5G UE at a high level in non-standalone architecture
- Step through the life of a 5G UE at a high level in standalone architecture
- Identify ways in which 5G NR meets the performance goals of 5G

Course Prerequisites

No Prerequisites

Outline

1. Key Signals and Channels of 5G NR
1.1 Downlink signals and channels
1.2 Uplink signals and channels

2. Life of a 5G UE
2.1 NSA vs. SA operations
2.2 Non-Standalone operations
2.3 Network acquisition
2.4 Attach
2.5 Data transfer
2.6 Standalone Operations
2.7 Network acquisition
2.8 Registration
2.9 PDU session setup
2.10 Data transfer

3. Meeting 5G Performance Goals
3.1 Ways to achieve higher data rates
3.2 Ways to achieve lower latency
3.3 Ways to achieve higher connection density

Putting It All Together

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