5G and Next-Generation Wireless Networks Training Course

3 – 7 January 2027
Muscat

AGILE LEADERS
Training Center

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Overview

5G and Next-Generation Wireless Networks Training Course is a one-week professional course for wireless engineers, radio planners, telecom architects, operations specialists, and technical managers, who leave with a Wireless Network Evolution Pack. It connects 5G architecture, radio access, spectrum, massive MIMO, beamforming, network slicing, edge computing, private networks, transport, automation, security, assurance, and IMT-2030 evolution. Agile Leaders Training Center presents the course on planning and operating next-generation wireless networks.

Who Should Attend

- Teams responsible for wireless network architecture and evolution
- Functions responsible for radio access planning and optimization
- Specialists responsible for mobile core, transport, and edge services
- Teams responsible for private network deployment and security
- Leaders responsible for wireless performance and investment decisions

The course assumes participants work with telecom networks, radio systems, infrastructure, or service operations and leaves out basic networking, vendor exam preparation, and device configuration.

Departments and Industries

The course supports wireless network decisions across communications services and connected industries.

- Mobile network engineering and operations teams
- Radio planning and spectrum functions
- Telecom architecture and service assurance departments
- Industrial private network teams
- Transport and logistics connectivity functions
- Healthcare and energy digital infrastructure teams

Learning Objectives

By the end of this course, participants will be able to:

- Analyze 5G architecture, interfaces, and service flows
- Evaluate spectrum, massive MIMO, and beamforming choices
- Build slicing, edge, and private network designs
- Apply transport, automation, and security controls
- Diagnose radio, core, and service performance evidence
- Compare 5G evolution with IMT-2030 scenarios

Course Agenda

Day 1: 5G Architecture and Service Models

- 3GPP 5G Service-Based Architecture Map
- Control Plane and User Plane Function Matrix
- Access, Mobility, and Session Flow Diagram
- Quality of Service and Policy Control Model
- 5G Deployment Option Decision Matrix

Day 2: Radio Access and Spectrum Engineering

- 5G NR Spectrum Portfolio and Band Plan
- Radio Coverage and Capacity Planning Model
- Massive MIMO Configuration Decision Matrix
- Beamforming and Beam Management Flow
- Radio Performance Indicator Dashboard

Day 3: Slicing, Edge, and Private Networks

- Network Slice Service and Resource Blueprint
- ETSI MEC Application and API Architecture
- Private 5G Use-Case and Coverage Canvas
- Edge Placement and Latency Decision Model
- Slice and Edge Service Assurance Map

Day 4: Transport, Automation, Security, and Evolution

- Fronthaul, Midhaul, and Backhaul Transport Map
- Closed-Loop Network Automation Workflow
- Private 5G Threat and Control Register
- End-to-End Performance Assurance Scorecard
- ITU IMT-2030 Scenario and Capability Roadmap

Day 5: Wireless Network Evolution Practice

- 5G Architecture and Service Flow Exercise
- Radio Coverage, Capacity, and Beam Exercise
- Slicing, Edge, and Private Network Exercise
- Transport, Security, and Assurance Exercise
- Wireless Network Evolution Pack Capstone Exercise

Practical Exercises

The course uses suggested activities to practice wireless network planning and operating decisions.

- Suggested activity: map 5G functions, interfaces, service flows, policy controls, and deployment options.
- Suggested activity: compare spectrum, coverage, capacity, massive MIMO, beamforming, and radio evidence.
- Suggested activity: design a network slice, MEC placement, private network, and service assurance model.
- Suggested activity: build a transport, automation, security, performance, and IMT-2030 evolution roadmap.

FAQs

Who suits 5G and next-generation wireless networks training and what does it assume?

5G and next-generation wireless networks training suits professionals working with radio, mobile core, transport, edge, private networks, or service operations. It assumes telecom or network experience and does not teach basic networking.

How does next-generation wireless networks training differ from basic networking training?

Next-generation wireless networks training focuses on 5G architecture, radio access, spectrum, slicing, edge computing, private networks, transport, automation, security, and assurance. Basic networking training focuses on general connectivity and protocol foundations.

What does network slicing provide in 5G networks?

Network slicing provides separated logical service environments over shared infrastructure. Each slice can connect service requirements, network functions, resources, policies, security controls, and assurance evidence.

How does MEC support next-generation wireless networks?

MEC places cloud and IT service capabilities near network access, supporting low-latency processing, radio-network information, service APIs, edge-native applications, and deployment choices from on-premise to network edge.

How does IMT-2030 relate to 5G network evolution?

IMT-2030 provides the framework for 6G evolution beyond IMT-2020. It extends wireless planning toward new communication, intelligence, sensing, connectivity, sustainability, security, and resilience scenarios.

Conclusion

Participants take a Wireless Network Evolution Pack back to work. It connects 5G architecture, radio engineering, slicing, MEC, private networks, transport, automation, security, assurance, and IMT-2030. It changes isolated technology choices into traceable network designs, operating controls, performance evidence, and an evolution roadmap.