# 5G and ORAN: Mastering Next-Gen Mobile Networks

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Tunis (Tunisia)



# 5G and ORAN: Mastering Next-Gen Mobile Networks

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## Why This Course

The rollout of 5G and Open Radio Access Networks ORAN is transforming mobile communications, enabling higher performance, flexibility, and innovation. This intensive 1-week program equips participants with the knowledge and practical skills to design, deploy, and optimize 5G ORAN networks. Through a combination of theoretical learning, hands-on sessions, and real-world case studies, attendees will gain the expertise needed to drive next-generation network deployments and innovations.

## What You'll Learn and Practice

By attending this course, you will be able to:

- Understand the architecture and key components of 5G networks.
- Master ORAN principles, interfaces, and reference architecture.
- Deploy, configure, and optimize 5G ORAN networks in real-world scenarios.
- Develop and implement xApps and rApps for network performance enhancement.
- Apply AI/ML techniques in ORAN for intelligent network management.
- Explore emerging trends, testing strategies, and future radio technologies.

## The Program Flow

### Day 1: Introduction to 5G and ORAN

- 5G architecture overview
- Evolution from traditional RAN to ORAN
- ORAN Alliance and ecosystem
- Key drivers and benefits of ORAN

### Day 2: ORAN Architecture and Interfaces

- ORAN reference architecture
- Open Fronthaul specifications
- RAN Intelligent Controller RIC
- O-CU, O-DU, and O-RU components



### Day 3: ORAN Deployment Strategies

- Virtualization and cloud-native principles
- Network slicing in ORAN
- Integration with 5G Core networks
- Security considerations in ORAN

### Day 4: ORAN Implementation and Optimization

- xApps and rApps development
- AI/ML applications in ORAN for network optimization
- Performance management and monitoring
- Troubleshooting ORAN networks

### Day 5: Advanced Topics and Future Trends

- Open RAN testing and certification
- Emerging use cases for ORAN
- Beyond 5G: 6G and future radio technologies
- Hands-on project: ORAN network design

## Individual Impact

Participants will leave this program with:

- Practical skills to design, deploy, and optimize 5G ORAN networks.
- Hands-on experience working with ORAN components and interfaces.
- Ability to develop xApps and rApps to enhance network performance.
- Understanding of AI/ML applications for intelligent ORAN management.

## Organizational Impact

Organizations will benefit from:

- Accelerated deployment of flexible, high-performance 5G ORAN networks.
- Enhanced network optimization through AI/ML-enabled solutions.
- Skilled personnel capable of designing and managing advanced mobile network architectures.
- Insights into emerging trends and future-proofing network infrastructure.



## Training Methodology

- Interactive lectures combined with hands-on labs and simulations
- Real-world case studies and project-based learning
- Group discussions and collaborative problem-solving
- Practical application of ORAN principles, interfaces, and network optimization techniques

## Beyond the Course

By the end of this 1-week program, participants will be ready to:

- Confidently deploy and manage 5G ORAN networks.
- Develop and implement network optimization strategies using xApps, rApps, and AI/ML.
- Understand emerging technologies and future developments in mobile radio networks.
- Contribute to organizational 5G strategies with practical, hands-on expertise.

