

O-RAN Architecture and Implementation for 5G Networks

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Sharm El-Sheikh (Egypt)

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O-RAN Architecture and Implementation for 5G Networks

2022-1762-145078 Location: Sharm El-Sheikh (Egypt) Fees: 4900 GBP

Why This Course

The future of mobile networks is open, intelligent, and flexible. This intensive 5-day program equips participants with in-depth knowledge and practical skills in Open Radio Access Network O-RAN for 5G networks. Attendees will explore O-RAN architecture, components, and interfaces, gaining hands-on experience with RAN Intelligent Controllers, Open Fronthaul, and integration with 5G core networks. The course combines theoretical insights with practical applications to prepare professionals for designing, deploying, and optimizing O-RAN solutions.

What You'll Learn and Practice

By attending this course, you will be able to:

- Understand O-RAN architecture, components, and interfaces.
- Analyze deployment scenarios and real-world use cases for O-RAN.
- Gain practical skills in implementing O-RAN solutions and xApps.
- Leverage RAN Intelligent Controllers RIC to optimize network performance.
- Apply Open Fronthaul specifications and virtualization strategies.
- Integrate O-RAN with existing 5G core networks effectively.

The Program Flow

Day 1: Introduction to O-RAN

- Evolution of RAN and introduction to O-RAN concepts
- Overview of the O-RAN Alliance and ecosystem
- Key drivers, benefits, and opportunities of O-RAN
- High-level O-RAN architecture overview

Day 2: O-RAN Components and Interfaces

- O-CU, O-DU, and O-RU components
- RAN Intelligent Controller RIC architecture
- Open Fronthaul Interface fundamentals
- E2, A1, and O1 interface specifications

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A graphic of a chessboard with several chess pieces (king, queen, rook, knight, and pawns) in gold and silver. The board is white and black checkered, and the pieces are arranged in a strategic formation.

Day 3: RAN Intelligent Controllers and xApps

- Functions of Near-RT RIC and Non-RT RIC
- xApp development and deployment practices
- AI/ML integration for RAN optimization
- Real-world use cases and performance enhancements

Day 4: Open Fronthaul and Virtualization

- Open Fronthaul specifications, protocols, and implementation
- Virtualization and cloudification in O-RAN networks
- Network slicing applications in O-RAN
- Security considerations and best practices

Day 5: O-RAN Deployment and Integration

- Planning and deploying O-RAN in diverse scenarios
- Integration with 5G core networks
- Performance tuning and optimization techniques
- Emerging trends and the O-RAN roadmap

Individual Impact

Participants will leave this course with:

- The ability to design and plan O-RAN architectures for multiple deployment scenarios.
- Hands-on experience with RIC and xApp development.
- Skills to implement and optimize Open Fronthaul interfaces.
- Knowledge to integrate O-RAN solutions seamlessly with 5G core networks.

Organizational Impact

Organizations will benefit from:

- Efficient deployment of flexible, open, and intelligent RAN solutions.
- Optimized 5G network performance leveraging RIC and AI/ML tools.
- Future-ready infrastructure capable of supporting advanced 5G services.
- A skilled workforce capable of implementing and managing O-RAN technologies.

The graphic features the text 'UK Training' in a small, sans-serif font above the word 'PARTNER' in a large, bold, black, sans-serif font. This text is positioned over a background of concentric white circles and a chessboard pattern. In the foreground, three chess pieces (a king, a queen, and a pawn) are visible, rendered in a metallic gold and silver finish.

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Training Methodology

- Interactive lectures combined with practical exercises
- Hands-on labs for xApp development and RIC configuration
- Case studies and real-world deployment scenarios
- Group discussions to design and optimize O-RAN networks

Beyond the Course

By the end of this 5-day program, participants will be ready to:

- Architect, deploy, and optimize O-RAN solutions for 5G networks.
- Utilize RIC and Open Fronthaul to enhance network efficiency.
- Integrate O-RAN seamlessly with existing network infrastructures.
- Apply best practices for security, virtualization, and future network expansion.

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A graphic illustration of a chessboard with several chess pieces. A large gold king piece is prominent in the foreground, with a silver pawn and a gold pawn nearby. In the background, there are concentric circles emanating from a point, suggesting a signal or network. The text 'UK Training PARTNER' is overlaid on this graphic.