



## Wifi 7 Technical Training

Wi-Fi technology is surging and is expected to be one of the most widespread technologies in the world and represents a crucial point in the daily and business lives of billions of people.

The pandemic has shown how the amount of data on Wi-Fi networks has reached critical levels: wireless bandwidth and capacity have never been greater.

This was the impetus behind Wi-Fi 6 (802.11ax), And yet, there's already another Wi-Fi iteration, Wi-Fi 7 (802.11be) which is the next significant milestone in the Wi-Fi long-term success story providing extremely high throughput and supporting real-time applications.

This course therefore focuses on the IEEE 802.11 family of technologies; 802.11n (Wi-Fi 4), 802.11ac (Wi-Fi 5) and 802.11ax (Wi-Fi 6) 802.11be (Wi-Fi 7), and in so doing, explains the architecture and operation of a Wi-Fi network

## Content of the 2 days Live Training:

### 1) Overview of Wi-Fi Evolution

- 1- Legacy: 11 (1997), Wi-Fi 3: 11g (2003), Wi-Fi 2: 11a (1999), Wi-Fi 1: 11b (1999), and Wi-Fi 4: 11n (2009)
- 2- Wi-Fi 5: 11ac (2013)
- 3- Wi-Fi 6: 11ax (2019)
- 4- Wi-Fi 6E: 11ax-2021 (2021)
- 5- WiFi 7: 802.11be
- 6- 6GHz Wi-Fi
- 7- Timeline of the 11be standardization process

### 2) Wi-Fi and IEEE

- 1- The IEEE 802.11 Standards
- 2- 802.11a/b/g/n/ac/ax.
- 3- The Wi-Fi Alliance Programmes.

### 3) Wifi capabilities

- 4- Wi-Fi and Radio Frequency.
- 5- Wi-Fi Capabilities.

### 4) Wifi and cellular interworking

- 8- Interworking with 4G
- 9- Interworking with 5G
- 10- Wifi calling

## 5) Wi-Fi Network Architecture

- 11- The Building Blocks of a Wi-Fi Network.
- 12- Basic Service Sets and Extended Service Sets
- 13- Using Mesh Technology to Extend Coverag

## 6) How OFDMA and MU MIMO operates

- 1- OFDMA
- 2- 1024-QAM
- 3- BSS Coloring
- 4- Target Wake Time

## 7) Wi-Fi Security

- 1- Wi-Fi Security Principles
- 2- Wi-Fi Protected Access 1, 2 and 3
- 3- WPA3 and Wi-Fi Easy Connect.

## 8) Wi-Fi 6 and Wifi 7 features.

- 1- Motivations and enhancements for Wi-Fi
- 2- Wi-Fi 7 Application Scenarios
- 4- Throughput to 30 Gbps +
- 5- Up to 320 MHz Bandwidth
- 6- Higher-Order 4096-QAM