

# 5G Indoor Radio Planning Training

## Training description

According to statistics, more than 70% traffic of 4G Mobile networks occurs indoors and it is the same going on with 5G networks.

Therefore operators indoor mobile network capabilities are critical and one of the core competitiveness in the 5G era.

Of course, different indoor scenarios have different service requirements and diversified service requirements lead to diversified network construction requirements.

Also traditional solutions are inadequate to meet requirements for special scenarios such as high speed railways, subways, campuses and stadium, that justify the need to be planned and designed based on 5G network characteristics to ensure network quality.

The course focus on indoor scenarios highlighting key points for deploying 5G indoor digital systems, providing details on planning 5G indoor distributed sites (DAS, IBS) , deployment modes and provide the design of the corresponding solution depending on the scenario.

## Who would benefit:

This course is designed for radio engineers and planning engineers that have a good knowledge of 5G NG-RAN architecture Mobile planning needs.

## Training content

### 1) Technical Indoor Building solutions

- What is IBS
- Different types of IBS (Small cells, Digital indoor solutions, DAS ...)
- What is DAS
- DAS Signal sources
- End to end IBS architecture for different coverage need.

### 2) Types of DAS and Evolution to 5G

- Passive DAS Architecture
- Components of passive DAS
- Pros and Cons of Passive DAS
- Active DAS Architecture
- Component of Active DAS
- Pros and Cons of Active DAS
- Repeaters in Active and Passive DAS
- Evolution of Passive DAS to 5G

### 3) 5G Small cell, Wifi and Digital indoor solutions

- Small cells
- Digital indoor solution (vendors)
- Wifi

### 4) 5G DAS Planning

- 5G Indoor Planning tools
- Indoor propagation models
- 5G RF Link budget

## **5) 5G IBS Planning in Stadium and Metro**

- 5G indoor use case with Stadium
- 5G indoor use case with Metro

## **6) Troubleshooting of DAS networks**

- Passive Intermodulation Issue in DAS (PIM Issue)
- Interference from 5G outdoor to 5G indoor (SSB and SIB1)
- External interference issue in DAS
- Monitoring your DAS Network