

# 2G to 5G Radio Network Planning Fundamentals

This course gives an overview about radio network planning in general and shows the specifics to plan 2G to 5G radio networks. Some 4G and 5G basics are given at the start of the training.

## Target group / Prerequisites

Technicians and engineers which work on network planning tasks in mobile networks. The participants should have some knowledge on 2G to 5G networks, especially the air interface.

## Course contents

### LTE architecture, signalling, procedures and air interface

- Network elements and architecture
- Procedures and signalling
- LTE air interface
- LTE advanced und Narrowband IoT

### 5G architecture, signalling, procedures and air interface

- 5G network architecture
- Procedures and signalling
- Virtualisation and Network Slicing
- 5G New Radio air interface
- Frequency bands and bandwidth

### Radio waves and modulation

- Electromagnetic waves
- Power level and dB calculations
- Digital modulation

### Antennas

- Passive antennas (classic)
- Massive MIMO antennas (active)

### Radio network planning fundamentals

- Signal level and sensitivity
- Wave propagation
- Fresnel-Zone
- Fading effect
- Link Budget

**Duration:**

3 days

**Course ID:**

NW1296

**Prerequisites:**

Good knowledge of mobile networks

### **2G Radio network planning**

- Cell planning
- Feeder and Jumper cable
- Network coverage planning
- Frequency planning
- Network-ID planning

### **LTE / 5G radio network planning**

- Network coverage planning
- Capacity planning
- LTE and 5G antennas
- Network-ID planning
- Neighbourhood planning

## **Certification**

Certificates are given to all participants at the end of the course about the successful completion.

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### **Course Registration:**

Please contact us via

- phone: +49 89 1894354-405
- email: [training@tfk-technologies.de](mailto:training@tfk-technologies.de) or
- via our website <https://skilleap.com/courses>

You will receive a confirmation of your registration. We can also advise you concerning the best combination of course contents.

For clients with special requirements the optimal training concept can be customized. Modules from our training portfolio can be combined to meet your company-specific needs.