

## **Webinar: GSM in 3 Hours**

### **Webinar Duration:**

- app. 3 hours (2 x 1.5 hour + 1 break)

### **Webinar Description:**

- This Webinar provides a fast track to the most successful mobile radio technology ever: GSM.
- The Webinar starts with the presentation of the history and potential future of GSM and the description of its most popular services. This part ends with the presentation of the worldwide network penetration and subscriber numbers of GSM.
- In the next part the Webinar outlines the GSM-network architecture with its hierarchy and its different components, pointing out the tasks and functions of BTS, BSC, MSC, VLR, HLR and EIR.
- Focus of the Webinar is on the following chapter that discusses the air interface related aspects of GSM in more detail. The student is introduced into the essential concepts of GSM for resource sharing like TDMA and FDMA and these abstract terms are referred back to physical basics. This part also describes how GSM resolves the problem of variable distance between mobile station and base station.
- In the same chapter, the Webinar presents such important details as the logical and physical channels of GSM and it presents the signal processing chain of GSM which relates particularly to channel coding, interleaving, encryption and modulation.
- The final chapter is dedicated to operational aspects of GSM. This part explains for instance what happens when a user powers on his/her phone and what happens during a call setup. Another scenario is dedicated to the transfer on a short message.

### **Some of your questions that will be answered during this Webinar:**

- What is specific to GSM and which assets made it so successful?
- How does TDMA operate?
- How does a call setup work in GSM and how is my SMS transferred?
- What are logical and physical channels in GSM?
- How does frequency hopping work in GSM and why is it used?
- What is specific about GMSK-modulation and what makes it different from regular MSK?

---

## **Table of Content:**

---

---

### **Part 1: Overview of GSM**

- **History and Future of GSM**
  - **Worldwide Penetration and Subscriber Numbers**
  - **GSM Services**
  - **Network Architecture**
- 

### **Part 2: The Air-Interface**

- **Sharing the Resources among several Users: FDD, TDMA and FDMA**
  - **Logical and Physical Channels**
  - **Cell Selection and Synchronization**
  - **The Signal Processing Chain: Channel Coding, Interleaving, Encryption and Modulation**
  - **Advanced Operation: Frequency Hopping, Discontinuous Reception and Transmission**
- 

### **Part 3: Operation of GSM**

- **Registration**
- **Call Establishment and Release**
- **SMS Transfer**
- **Handover**