BLACKBIRD FOR TRAINING

# Telecommunication System Engineering Training

23 – 27 November 2026
Berlin (Germany)



# Telecommunication System Engineering Training

**Ref:** 3254453_180874 **Date:** 23 – 27 November 2026 **Location:** Berlin (Germany) **Fees:** 5900 GBP

## Introduction

The Telecommunications Systems Engineering Course provides a detailed and practical understanding of telecommunication systems, their functions, and key technologies shaping the industry. Covering critical topics such as digital transmission, network management, and telecommunications systems integration, this course equips participants with the skills to design, implement, and manage advanced telecommunications projects.

By delving into business telecommunication systems, global telecommunication systems, and innovative types of telecommunication systems, the course prepares participants to stay ahead in a rapidly evolving industry. Participants will gain a thorough understanding of systems engineering principles as applied to telecommunications, enabling them to solve complex challenges and integrate systems effectively.

## Course Objectives

By the end of this course, participants will:

- Understand Telecommunications Systems: Define and explain telecommunication system functions and their role in modern infrastructure.
- Explore Advanced Telecommunications Systems: Learn about digital switching, data communications, and telecommunication system engineering concepts.
- Master Systems Integration: Develop strategies for telecommunication systems integration to optimize network performance.
- Apply Systems Engineering: Understand what is systems engineering and apply it to telecommunications projects for enhanced efficiency.
- Enhance Network Management Skills: Discover how to manage and optimize business telecommunication systems for better performance and reliability.
- Prepare for Future Trends: Analyze innovations in global telecommunication systems and emerging technologies shaping the industry.



# Course Outlines

## Day 1: Introduction to Transmission for Telephony

- Define telecommunication system: Overview of transmission systems for telephony.
- The three main impairments affecting voice channel transmission.
- Types of transmission systems: Two-wire and four-wire.
- The role of multiplexing in enhancing signal quality.
- Understanding noise measurement units and voice channel shaping.

## Day 2: Digital Transmission Systems

- Comparing digital transmission with analog methods.
- Fundamentals of Pulse-Code Modulation PCM and its advantages.
- PCM line coding techniques and the use of regenerative repeaters.
- Exploring SONET and SDH systems for high-speed transmission.
- Understanding the functions of telecommunication systems in a digital network.
- PCM switching versus analog switching: Advantages and challenges.

## Day 3: Introduction to Data Communications

- Binary conventions and error handling in data transmission.
- Physical layer interfaces in telecommunication systems.
- Digital transmission over analog channels and its applications.
- Integrating data communication technologies into business telecommunication systems.

## Day 4: Data Networks

- Introduction to network topologies and their role in telecommunications.
- Packet-switching concepts and interior gateway routing protocols.
- Basics of TCP/IP, IPv6, and Virtual Private Networks VPNs.
- Overview of Voice-Over IP VoIP and its integration into advanced networks.
- How telecommunication systems integration improves network efficiency.

## Day 5: Network Management

- Fault, configuration, performance, and security management in telecommunication systems.
- Importance of survivability in managing internal telecommunication systems.
- Network management in Public Switched Telephone Networks PSTN.
- Overview of Telecommunication Management Network TMN for effective systems engineering.



## Why Attend this Course: Wins & Losses!

- Comprehensive Knowledge: Understand what are telecommunications systems and their importance in modern businesses.
- Practical Skills: Gain hands-on experience in telecommunications systems engineering, covering both fundamental and advanced concepts.
- Strategic Insights: Learn to design and integrate business telecommunication systems and global telecommunication systems.
- Career Advancement: Acquire expertise in managing advanced telecommunications systems, boosting your professional profile.
- Problem-Solving Techniques: Master the telecommunication systems integration process and tackle complex challenges in system engineering.
- Future-Ready: Stay ahead of industry trends by exploring innovative types of telecommunication systems and cutting-edge technologies.
- Certification: Enhance your credentials with specialized knowledge in telecommunication system engineering and systems engineering planning.

## Conclusion

The Telecommunications Systems Engineering Course is an essential training program for professionals looking to excel in the telecommunications industry. By covering topics such as digital transmission, data networks, and network management, the course provides a strong foundation for managing complex telecommunications projects.

Participants will leave with a thorough understanding of what is systems engineering, how it applies to telecommunication systems, and the ability to design and manage business telecommunication systems effectively. This course ensures that attendees are well-prepared to take on roles as telecommunications systems technicians, system engineers, or specialists in telecommunications systems integration.

**Join this course to enhance your expertise and contribute to the advancement of modern telecommunication systems!**

