



ET 2.0: Telecommunications Technical Curriculum (TTC)

Program 3: Voice Knowledge

Course 1: PSTN Concepts and Operation

PROGRAM OVERVIEW

The ExperTech 2.0 series is a library of CD-ROM or intranet-based products covering key communications topics. Seminar style presentations provide telecom professionals with easy access to the information they need. Topics are presented by Hill Associates instructors renowned for their technical expertise, industry experience, and outstanding presentation style.

The *Telecommunications Technical Curriculum (TTC)* has a total of five programs, each of which consists of one or more courses. TTC is a modular, yet comprehensive program designed around the needs of those who want the details but cannot attend a more traditional classroom-based, leader-led program.

Program 3: Voice Knowledge is a four course series that deals with concepts and terminology related to the transmission of voice services. This first course of the series, *PSTN Concepts and Operation*, introduces the concepts underlying the public switched telephone network (PSTN), its components, and its operation. You will learn about the elements of the local and toll networks, network timing, how voice is digitized, voice quality assessment, the structure of telephone numbers, access network options, switch components, trunking systems, and signaling. The course concludes with a look at operations, administration, maintenance, and provisioning (OAM&P) issues.

Program 3, Course 1: PSTN Concepts and Operation runs 111 minutes, and includes nine lessons of audio, interactive elements, review slides, section knowledge checks, and a final exam. The participant can expect to spend about twice this amount of time to complete the course.

This program has three primary objectives:

- Explain voice transmission and the structure of the PSTN
- Identify and describe the voice access network components
- Review OAM&P challenges within a voice network

Specific topics can be developed, or packaged together to create a unique and customizable curriculum. All of our standard titles are available for preview at our store (www.hill.com/store).

About Hill Associates

At Hill Associates, we excel at creating custom talent development programs. Our experts help identify and assess your needs, and create training and educational programs that exactly meet those needs. Though we specialize in information technology, we've strengthened companies and organizations in a wide range of industries for over 25 years. Let us help you create a world-class talent development program that moves your business forward.

PROGRAM OUTLINE

Lesson 1: PSTN Structure

- Explore typical residential and commercial network elements and their roles

Lesson 2: Timing And Synchronization

- The importance of timing in the PSTN, the BITS system, and the strata of clocks
- Timing in a cable network

Lesson 3: Voice Characteristics

- Examines the nature of voice, the role of the telephone
- Digitization of voice and techniques for assessing voice quality, especially over IP

Lesson 4: Telephone Numbers

- Structure of international numbers and the North American Numbering Plan

Lesson 5: Access Networks

- Access options (POTS, ISDN, DLC, HFC, and cellular)

Lesson 6: Switches

- Elements of a circuit vs. packet switched network

Lesson 7: Trunking

- Primary trunking systems used in North America

Lesson 8: Signaling / SS7

- The role of signaling and SS7, differentiating in-band vs. out-of-band signaling

Lesson 9: OAM&P

- Operations and Business Support Systems, Telecom Management Network, and FCAPS principles