



## SS7 Protocols

**Course Length:** 4 ½ days

**Description:** The SS7 Protocols course provides an in-depth look at the structure and supporting documents of this widely-deployed signaling protocol. A thorough understanding of its structure, use and deployment is essential to anyone operating, managing or maintaining today's complex telephony network. Emphasis is placed on underlying documentation that supports the protocol's structure and use in trunk setup and application services.

### **Course Outline:**

- **CCS Architecture**
  - ✓ Network nodes
  - ✓ Link configurations
  - ✓ Low-speed and high-speed links
  - ✓ Interconnection issues
  - ✓ Support systems
  - ✓ Introduction to the SS7 protocol
  
- **SS7 Protocol - MTP**
  - ✓ Supporting documentation
  - ✓ Signal Unit structure
  - ✓ Data Link layer
  - ✓ Link layer
  - ✓ Network layer
    - Routing and SLS
  - ✓ Network Management
    - Link Management
    - Route Management
    - Traffic Management
    - Congestion control
  
- **SS7 Protocol – ISDN-UP**
  - ✓ Supporting Documentation
  - ✓ Structure of ISDN-UP
  - ✓ Messages used by ISDN-UP
  - ✓ Trunk maintenance
  - ✓ Sample call flow scenarios

- **SS7 Protocol - SCCP**
  - ✓ Supporting Documentation
  - ✓ Connectionless and connection-oriented services used
  - ✓ Structure of SCCP
  - ✓ Global Title Translation & Global Title routing
  
- **SS7 Protocol - TCAP**
  - ✓ Supporting Documentation
  - ✓ Structure of TCAP
  - ✓ National versus private definitions
  
- **Applications**
  - ✓ Supporting Documentation
  - ✓ Toll-Free Services
  - ✓ CLASS Services
  - ✓ AIN and Core INAP
  - ✓ Mobile Services – ANSI-41 and GSM
  - ✓ Number Portability
  - ✓ Wireless E911

Many exercises are provided throughout the course, re-enforcing a practical understanding of the material. This gives the student practice in analyzing the SS7 protocol and understanding how the data being sent and received is used.

**What You Will Learn:** This course will give the student the structure of the protocol down to the binary level. Emphasis is placed on giving the student the ability to isolate and sectionalize troubleshooting in the Common Channel Signaling (CCS) network. There is also a thorough examination of the feature services that are deployed today and how the network and the SS7 protocol support those services.

**Who Will Benefit From This Course:** This course will be an invaluable tool for those individuals responsible for maintenance and surveillance of the voice or signaling network. This is especially true for personnel working in a control center environment such as the NOC, INAC, ESAC, etc. Anyone responsible for maintaining services on the intelligent network platform would also benefit. Others would include network or traffic engineers, technical support and interconnection specialists.

**Course Prerequisites:** A basic knowledge of telephony and signaling would be helpful, but not essential.

**Instructors:** All of our instructors have years of experience developing and teaching technical courses at Telcordia Technologies (Bellcore) Learning Services in Lisle, IL.. They are all CompTIA CTT+ Certified Professionals and SS7 certified.

*\* This course is provided through special agreement with Telecom Training Associates, Inc.*