



## CompTIA CAQC Approved Training Material

The following training material has been reviewed by CompTIA and is CompTIA CAQC approved.

**Title :** LIDO Telecommunications Essentials®  
eLearning series

**Type :** Web-based multimedia elearning, ebook

**Pre-Requisites:** None Specified

**Publisher :** [The LIDO Organization, Inc.](#)

Learn how to think telecom with LIDO Telecommunications Essentials®, the world's leading e-Learning curriculum for anyone requiring a working knowledge of the telecommunications industry.

LIDO Telecommunications Essentials®, a comprehensive 34 hour rich-media curriculum, demystifies the complex telecom industry, concepts and terminology, explaining the fundamental principles of telecom technologies and networks, as well as key applications and prominent business issues. Presented in four parts, LIDO Telecommunications Essentials® provides a thorough understanding of the entire telecommunications landscape in an effective presentation by internationally renowned telecommunications expert, Lillian Goleniewski.

Topics covered include:

- communications fundamentals,
- transmission media,
- circuit versus packet switching,
- public switched telephone networks,
- data communications basics,
- local area networking,
- wide area networking,
- Internet and IP infrastructures,
- IP services and converged networks,
- next generation networks,
- optical networking,
- broadband access alternatives,
- wireless communication principles,
- wireless WANs, MANs, LANs, and PANs,
- broadband wireless access, and
- emerging mobile applications.

LIDO Telecommunications Essentials eLearning is a software-delivered program with 34 hours of dynamic multimedia lectures, simultaneous transcripts, accompanying slide shows and animations, downloadable transcripts and powerpoints, and clickable links to supporting educational resources, as well as quizzes to test student understanding.

LIDO Telecommunications Essentials elearning is CompTIA Approved Quality Curriculum (CAQC) and presents a thorough understanding of the entire telecommunications landscape, including the concepts necessary to integrate data, voice and video. For those pursuing the CompTIA convergence+ certification, additional complimentary study materials are provided to prepare for the exam.

Prior to pursuing Convergence+ certification, candidates first must obtain their Network+ certification or possess 18 to 24 months experience in data networking, VoIP and other related technologies.

**CompTIA Convergence+ Exam Domains:**

Telephony  
Network Engineering  
Applications  
Hardware and Architecture  
Management  
Security

**Exam CT0-101** – CompTIA Convergence+ is available through [Thomson Prometric](#) and [Pearson VUE](#) test centers worldwide.

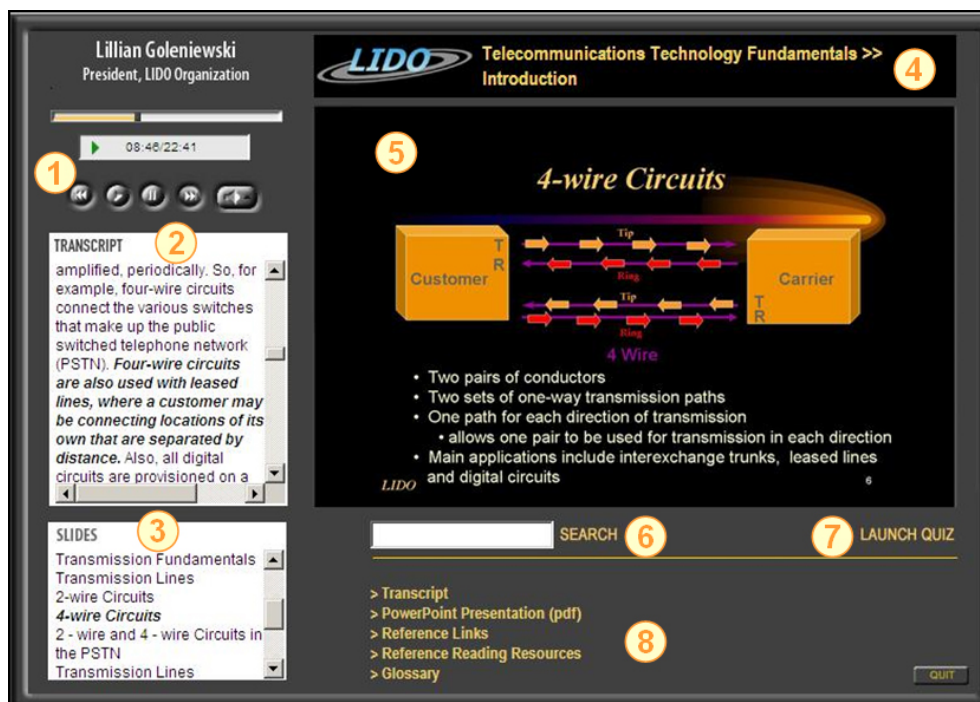
## **LIDO eLearning Benefits**

LIDO Telecommunications Essentials is a dynamic and effective e-Learning product, with lessons delivered right to your computer, allowing you to learn at your own pace and on your own schedule.

### **Benefits of the e-Learning format include:**

- **Learning-on-demand:** Busy professionals can structure their study time around work schedules. The modular structure of the series facilitates customized learning plans, with cross-references to related modules and resources, encouraging greater exploration of topic areas.
- **Distributed Learning:** Individuals can extend the learning process over time, which aids in increased information retention. Distributed team members also can learn together despite time and distance.
- **Dynamic Rich Media Presentation:** Simultaneous audio, word-for-word transcripts, synchronized visuals and selected links to helpful resources enhance the learning experience.
- **Learning Styles:** Whether you are an auditory, visual or kinesthetic learner, this series supports your learning style. You select the media type and presentation that assures your attention to learning. Listen, read, visualize, draw, highlight – work with the information in the manner that best enables you to assimilate and retain!
- **Interactive Quizzes:** Quizzes at the end of each module segment allow for reinforcement of the lesson content.
- **Searchable Glossary:** The comprehensive glossary contains more than 1,500 terms you'll encounter most frequently. Using the search function within the glossary allows rapid location of definitions, while also cross-referencing related terms.
- **Search Functionality:** Allows individuals to quickly find the information they need.
- **Learning Center Resources:** This eLearning series includes access to many valuable learning resources, including a comprehensive searchable glossary, interactive quizzes, links to more than 1,500 related websites, and links to hundreds of recommended reading and educational resources.
- **Reduced Training Costs:** e-Learning format saves money by avoiding the costs of employee travel, conference fees and time away from the office.

## LIDO eLearning Player Features



1. The **Status Bar** displays the status of the media (playing, paused, buffering, etc.) and the current time code of the media as well as the duration of the entire presentation. This feature saves time by providing an indication of how long the overall presentation is and how much has been viewed.
2. **Transcript Highlighting** focuses on the current text tract being spoken. By clicking on any portion of the text, you will automatically switch to the proper audio segment and slide as well.
3. The **Slide Index** follows along with the audio, enabling you to always know which section is being heard and viewed. When navigating topics via the slide index, the audio files and transcript change accordingly.
4. The **Module and Segment Title** quickly identify the module and segment you are listening to and viewing.
5. The **Slide Window** displays the supporting materials for your presentation.
6. The **Search Function** searches the transcript and presentation slides for key words or phrases.
7. The **Launch Quiz** button opens a window that presents you with an interactive quiz for the segment. Answer the questions, submit your answers, and receive your total score, along with a response indicating correct answers, identifying wrong answers and providing the correct response.
8. The **Learning Resources** window provides you with a host of resources to enhance and reinforce your learning experience. Features include printable transcript and slide presentations, reading resource links, reference links, glossary, and document related to module content.

## **LIDO Telecommunications Essentials Part 1: Communications Fundamentals**

LIDO Telecommunications Essentials Part 1: Communications Fundamentals provides the foundation for a solid, practical understanding of the telecommunications industry. If you are a professional requiring a working knowledge of telecommunications, LIDO Telecommunications Essentials Part 1 will provide you the information you need to start *thinking telecom*.

New rules in the communications economy are driving big changes in the telecommunications industry. Professionals in the ICT industry face challenges in developing an understanding of the forces shaping the revolutionary change in communications infrastructures worldwide, as well as relating to industry-insider jargon, and deciphering how all of the pieces of telecommunications past and present fit with emerging, evolving, and future communications technologies.

In Part 1, you will learn the fundamental principles of telecommunications, as well as the idiosyncratic, insider language that pervades the communications networking industry - you will learn to speak telecom! You will walk away with indispensable, fundamental telecom knowledge. Armed with this knowledge, you will have the intelligence to assess new developments as they emerge – you will possess the ability to *think telecom!*

**Running Time: ~ 8 hours**

### **Topics Covered:**

#### **MODULE 01 - Understanding the Broadband Evolution – 98 minutes**

- Introduction
- Measurements of the Digital Era
- Adapting to New Traffic Patterns
- Embedded Devices
- Intelligent Wearables
- Human-Machine Interactions
- Grid Computing and Real-time Communications
- The New Generation of Networks

#### **MODULE 02 - Telecommunications Technology Fundamentals – 91 minutes**

- Intro & Transmission Fundamentals
- Electromagnetic Spectrum
- Analog & Digital Transmission
- Multiplexing
- Political and Regulatory Forces in Telecom

## **LIDO Telecommunications Essentials Part 1: Communications Fundamentals**

### **MODULE 03 - Traditional Transmission Media – 124 minutes**

- Intro & Media Characteristics
- Twisted-Pair Copper Cable
- Coaxial Cable
- Microwave
- Satellite
- Fiber Optics

### **MODULE 04 - Establishing Communications Channels – 58 minutes**

- Intro & Establishing Communications Channels
- Switching and Routing
- Circuit Switching
- Packet Switching
- The PSTN and the Internet

### **MODULE 05 - The Public Switched Telephone Network (PSTN) Infrastructure – 107 minutes**

- Intro & the PSTN Infrastructure
- The PDF Infrastructure
- The SDH/SONET Infrastructure
- Signaling Systems
- Intelligent Networks
- SS7 & Next Generation Networks

## **LIDO Telecommunications Essentials Part 2: Data Networking and the Internet**

Data is the fastest growing traffic stream. The changing dynamics of bandwidth and processing power are shifting network economics and computer architecture. With these seismic changes in the technology industry, no telecom or IT-related professional should be without a basic understanding of data communications basics, local area networking, wide area networking, and the Internet and IP infrastructures. Telecommunications Essentials Part 2: Data Networking and the Internet provides a complete and concise overview of the fundamental concepts to help you *think telecom*.

**Running Time: ~ 7 hours**

### **Topics Covered:**

#### **MODULE 6 - Data Communications Basics – 69 minutes**

- Intro & Data Communications Architectures
- Data Communication Traffic
- Data Transmission
- The OSI and TCP/IP Reference Models

#### **MODULE 7 - Local Area Networking Basics – 59 minutes**

- Intro & LAN Basics
- LAN Transport Techniques and Standards
- LAN Access Techniques and Topologies
- LAN Switches, VLANs and Bridges
- Routers and IP Switches

#### **MODULE 8 - Wide Area Networking – 107 minutes**

- Intro & Wide Area Networking
- Circuit Switched and Leased Line Networks
- ISDN Networks
- Packet Switched Networks
- X.25
- Frame Relay
- Asynchronous Transfer Mode (ATM)

## **LIDO Telecommunications Essentials Part 2: Data Networking and the Internet**

### **MODULE 9 - The Internet Infrastructure – 169 minutes**

- Intro & Internet Basics
- Internet Protocols
- Routing Protocols
- Internet Network Architecture
- Internet Addressing and Address Resolution
- IPv6 Addressing
- Domain Name System (DNS)
- The Internet Infrastructure
- Service Providers and Interconnection
- IP Quality of Service
- What's Next on the Internet

## **LIDO Telecommunications Essentials Part 3: Next Generation Networks**

LIDO Telecommunications Essentials Part 3 provides a complete guide to broadband technologies and next generation networks. Driven by the forces of innovation, the telecom industry is on the brink of huge leaps in broadband communications. These changes will have repercussions throughout the industry, impacting everything from architecture to products, business models and technical standards. What are the next generation technologies and which are likely to survive? LIDO Telecommunications Essentials Part 3 answers these questions with in-depth coverage of IP Services, next-generation network infrastructures, broadband applications, optical networking, and broadband access alternatives.

**Running Time: ~ 11 hours**

### **Topics Covered:**

#### **MODULE 10 - IP Services – 180 minutes**

- Intro and The Evolution to IP Services
- IP Telephony
- IPT Network Architecture
- Digital Voice Technologies
- IPT Quality of Service
- VoIP Call Signaling Protocols
- ENUM
- Virtual Private Networks
- Applications of VPNs
- IPsec and GRE VPNs
- Layer 3 VPNs
- Layer 2 VPNs
- VPN Security
- IPTV

#### **MODULE 11 - Next-Generation Networks – 193 minutes**

- Intro & The Broadband Evolution
- Multimedia Networking Requirements
- Digital Television
- The Broadband Infrastructure
- Next-Generation Networks and Convergence
- The IP Multimedia Subsystem
- The Multiservice Intelligent Edge
- Quality of Service
- The MPLS Architecture

## **LIDO Telecommunications Essentials Part 3: Next Generation Networks**

### **MODULE 12 - Optical Networking – 92 minutes**

- Intro & Optical Networking Drivers
- Optical Networking Elements
- Optical Switches
- The Optical Edge
- The Optical Core
- The IP+Optical Control Plane

### **MODULE 13 - Broadband Access Alternatives – 184 minutes**

- Intro & Broadband Access Drivers
- DSL Technology
- Cable TV Networks
- Fiber Solutions
- Wireless Broadband
- Broadband Powerline Telecommunications
- Home Area Networks

## **LIDO Telecommunications Essentials Part 4: Wireless Communications**

LIDO Telecommunications Essentials Part 4 addresses how wireless technologies are making anytime/anywhere computing and communicating a reality. Part 4 provides a comprehensive survey of the wireless networking landscape, from laying a foundation for the understanding of radio transmission fundamentals to the latest and greatest in mobile applications. We will look at the emerging area of broadband wireless, including fixed and mobile wireless alternatives for voice, data, video and multimedia, as well as what may be the most important driver of wireless - wireless access to the Internet and the entertainment universe. Part 4 will examine the impressive range of emerging wireless technologies, systems and services, delving into the realm of next-generation wireless networks, covering the full scope of WANs, MANs, LANs, PANs and even FANs and BANs. You'll learn how wireless communications is driving innovation in the industry, and changing the fabric of both commerce and lifestyle – bringing benefits to industry, and more importantly to the growing population of humans and machines alike.

**Running Time: ~ 7 hours**

### **Topics Covered:**

#### **MODULE 14 - Wireless Communications Basics – 83 minutes**

- Intro & A Brief History of Wireless
- Wireless Communications Regulation Issues
- Wireless Impairments
- Antennas
- Wireless Bandwidth
- Wireless Signal Modulation
- Spectrum Utilization

#### **MODULE 15 - Wireless Wide Area Networks (WWANs) – 106 minutes**

- Intro
- Analog Transmission
- 2G Digital Cellular Radio
- 2.5G Enhanced Data Services
- 3G: Moving Toward Broadband Wireless
- Beyond 3G
- 4G: Wireless Broadband
- 5G: Intelligent Technologies

## **LIDO Telecommunications Essentials Part 4: Wireless Communications**

### **MODULE 16 - Wireless MANs, LANs and PANs – 180 minutes**

- Intro and Broadband Fixed Wireless Access (BFWA)
- WMANs – 802.16, WiBro, 802.20
- WMANs – iBurst, Flash-OFDM, DMB, VF
- WLANs and Wi-Fi
- IEEE 802.11x standards
- WLAN Security
- Voice over WLAN
- Integration of WLANs and Cellular Networks
- Mesh Networks
- IEEE 802.15 standards
- Ultra-wide Band (UWB)
- Radio Frequency Identification (RFID)
- Near-Field Communications (NFC)

### **MODULE 17 - Emerging Wireless Applications – 75 minutes**

- The Handset Revolution
- Mobile IP
- IP Multimedia Subsystem
- Mobile Gaming
- Mobile Video
- Mobile TV
- Mobile Content

## **System Requirements for LIDO Telecommunications Essentials eLearning**

### **Application Viewing Requirements**

- P3 400 MHz Pentium Processor
- 128 MB of RAM (256 MB Recommended)
- Monitor and video card that support 64K color
- 16-bit Windows compatible sound card with speakers
- Windows® 98 Second Edition, NT, 2000, XP, Vista
- Internet Explorer ver. 6.01, 5.5, 6.0 or 7.0
- Windows Media® Player ver. 6.4 – 11
- 56 K modem
- Broadband access will provide the best performance!

### **All Audience Members**

- **Media Player**

Windows Media Player ver. 6.4, 7, 8, 9, 10 or 11 is needed to view the webcast.

- [Download Windows Media Player](#)

Click on a link above to download a player for installation.

- **Internet Browser**

One of the following Internet browsers is necessary to view the webcast:

- [Microsoft Internet Explorer 5.0 or higher](#)
- [Firefox 2.0.0.20 or higher \(requires Firefox Plugin\)](#)
- [Download Firefox Plug-in](#)

Click on a link above to download and install a new browser, if your current browser is not a supported version. To determine the version of your current browser, open your browser and click Help ->About Internet Explorer Communicator from the top menu bar.

- **LMS Interfaces**

LIDO Telecommunications Essentials is SCORM 1.2 compliant.

## **Delivery Options for LIDO Telecommunications Essentials**

LIDO Telecommunications Essentials e-Learning is provided on two convenient platforms, web-based and enterprise license, and on the basis of single or multi-user license.

Individuals can subscribe to a single-user-license and choose to have the eLearning delivered over the Web.

For enterprises, an annual multi-user license provides maximum flexibility and also is delivered over the Web, hosted on LIDO's LMS system, or deployed on the client's servers, LMS and network. LIDO Telecommunications Essentials is SCORM 1.2 compliant and can be customized to meet the client's LMS requirements.

Enterprises can request customization of the eLearning series, ranging from the incorporation of company logos and visual philosophy to the addition of company specific content, virtual labs, 2.0 technologies, and social networking features.

Pricing for LIDO Telecommunications Essentials is on a per-license basis with volume discounts to suit your company's training and education budget. For further pricing information regarding multi-user licenses or enterprise customization, please contact:

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For single user pricing, visit the [eLearning store](#).