

SCTE Initiatives for the Digital World in 5+ Years

11th Broadband Technology Conference and SCTE
Central Europe Chapter Meeting
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What is the SCTE?



- **US-based membership organization:** www.scte.org
 - Over 13,000 members worldwide,
 - New chapters in central Europe, Latin America and China
- **Standards development organization**
 - From F connector to DOCSIS to advanced advertising and RFoG
- **Industry trade show: SCTE Cable-Tec Expo**
- **Training and certification**
 - Installers to advanced network scientists and digital video experts
- **Web resources:**
 - SCTE Pd Courses and Manuals
 - Primers
 - Trainers' Resources
 - Bookstore
 - InfoScope® Conference Archives
 - Local Chapters
 - Memberlink/SCTE-List
 - Mobile Apps
 - Publications
 - Symbols and Graphics
 - Tech Facts
 - Dictionaries and Encyclopedias
 - Tools
 - Tech Tips
 - White papers
 - SCTE Foundation: Grants, Scholarships

Example Cable Industry Trends and Challenges for the Next 5+ Years



- HFC capacity expansion and management
- Next generation networks
- Untethered devices
- Implementing cloud architectures
- Transition to all-IP transport
- Business services
- Energy efficiency
- Training and certification of in-house and especially contract installers

The SCTE standards program is conducted by technical subcommittees. These are the consensus bodies for standards development. The overall program is supervised by the Engineering Committee of the SCTE Board of Directors.

Subcommittees

- **Cable Applications Platform (CAP)**
- **Data Standards (DSS)**
- **Digital Video (DVS)**
 - Working Groups: Video and Audio Services, Data and Transport Applications, Network Architecture and Management, Transmission and Distribution, Digital Program Insertion
- **Emergency Alert Systems (EAS)**
- **HFC Management (HMS)**
 - Standards and recommended practices for monitoring used in Hybrid Fiber/Coax networks including end-to-end multimedia quality of service and MIB attributes for headend and outside plant equipment
 - Working Groups: Outside Plant, Inside Plant Digital Video Monitoring, SDV Server Management, Multimedia Management of Picture Delivery
- **Network Operations (NOS)**
 - Standards and recommended practices for increased performance and availability of cable networks
 - Working Group: Measurements
- **Interface Practices (IPS)**
 - Cables, connectors, active and passive equipment plus system standards for RFoG applications
 - Working Groups: Actives, Passives, Connector and Cable, Fiber-Optic Interface, Construction and Maintenance
- **Sustainability Management (SMS)**
 - Reducing power consumption and costs, increasing operating efficiency and minimizing disposal effects of outdated equipment

SCTE Energy Standards

Summary of Activities



- SMS 001 – SCTE SMS Facilities Energy Management Recommended Practices
- SMS 002 – Product Environmental Specifications & Test Procedures
- SMS 003 – Adaptive Power System Interface Specification (APSIS™)
- SMS 004 – Energy and Density Benchmark Measurement (for hardware)
- SMS 005 – Predictive Alarming (EMS System/hardware)
- SMS 006 – Graphical Hardware Specification
- SMS 007 – 3D Facility Modeling of Energy
- SMS 008 – Virtual Monitoring & Control (telemetry)
- SMS 009 – Transaction Based Energy Consumption
- SMS 010 – High Availability Energy Measurements & Parameterization
- SMS 011 – Disaster Recovery (preparation and facilitation of DR practices)
- SMS 012 – Business Continuity (high reliability network planning)
- SMS 013 – Fleet (alternate fuel, GPS routing, telemetry, and procurement)
- SMS 014 – Recycling (end of life management)
- SMS 015 – Energy Financial Specifications
- SMS 016 – Network to Network Power System Interface Specification
- SMS 017 – Symbology of energy sources for network powering and fleet

How Better Training and Certification from SCTE Reduced OpEx Costs



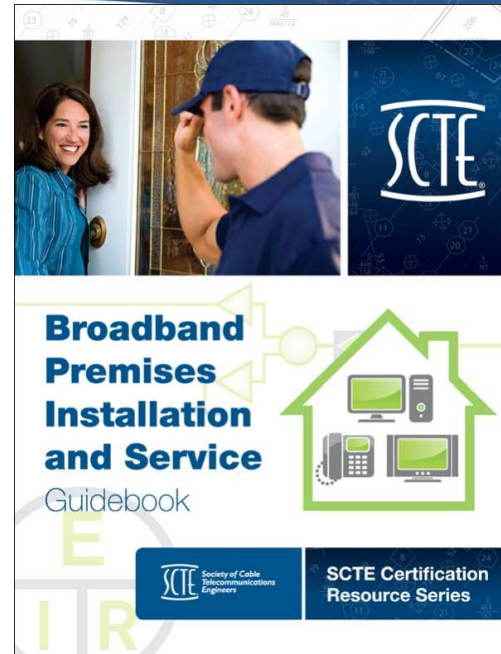
- Suddenlink (US Cable Operator)
 - First major cable operator to certify entire workforce
 - Savings of \$Millions in meaningful reductions in repeat service calls and customer churn
- First full year in place (end of 2008-2009) showed:
 - 10% reduction in repeat service calls
 - 4% reduction in customer churn
 - Improved employee satisfaction and reduced churn
- Per J.D. Power survey results:
 - Suddenlink was most improved regional video provider in overall customer satisfaction (between 2007 & 2009)

SCTE CERTIFICATION RESOURCES: NEW INSTALLER GUIDEBOOK



Table of Contents

- *Introduction to Cable*
- *Mod 1–Signaling and Transmission in Cable Networks*
- *Mod 2–Customer Service*
- *Mod 3–Installation Preparation*
- *Mod 4–Aerial Installation*
- *Mod 5–Underground Installation*
- *Mod 6–Bonding and Grounding*
- *Mod 7–Premises Wiring*
- *Mod 8–Equipment in the Home*
- *Mod 9–Test Equipment*
- *Mod 10–Equipment Installation (Video)*
- *Mod 11–Equipment Installation (HSD)*
- *Mod 12–Equipment Installation (Voice)*
- *Mod 13–Troubleshooting and Repair*
- *Mod 14–Premises Signal Configuration*
- *Mod 15–Safe Work Practices*
- *Appendix*
- *Glossary*



Optional Modules:
Business Services / Metro E
Home Networking
Home Security
IPv6
Advanced Troubleshooting

WHERE ARE ALL THESE GREAT RESOURCES? WWW.SCTE.ORG



The screenshot shows a web browser window displaying the SCTE website. The address bar shows www.scte.org/membership/Publication_Offers.aspx. The navigation menu includes: ABOUT SCTE, RESOURCES, EVENTS, PROFESSIONAL DEVELOPMENT, STANDARDS, CHAPTERS, MEMBERSHIP, and JOIN SCTE. The RESOURCES menu is expanded, listing: BOOKSTORE, CABLE SEARCH ENGINE, GLOSSARY, INFOSCOPE CONFERENCE ARCHIVES, LIVELEARNING™ WEBINAR ARCHIVES, MEMBERLINK, MOBILE APPS, PRIMERS, PUBLICATIONS, SYMBOLS AND GRAPHICS, TECH FACTS, DICTIONARIES AND ENCYCLOPEDIAS, TOOLS, TECH TIPS, TRAINERS' RESOURCES, WHITE PAPERS, SCTE FOUNDATION, SCTE LIST, CERTIFICATION RESOURCE, and SERIES. On the right side of the page, there are several service tiles: "Find a Job" (Find a new job, or post an opening), "Have an Emergency" (Tools for workforce protection), "Energy Management" (Smart Energy Management Initiative) with the SEMI logo, and "Member Directory" (Find and connect with your peers). At the bottom, there is a banner for "Cable Learning Review" with the text: "The quarterly Cable Learning Review will zero in on new or improved technical cable telecommunications content, at the e-branch and it's open 24/7." and the slogan "All Engineering. All the Time."

MOBILE SOLUTIONS TO AID IN YOUR JOB



[Ohms Law calculator](#)

Free
Combination Ohms Law calculator and resistor color decoder.

[Electrical Wiring Light](#)

Free
Pire Wheel/Ohms Law, Conduit Offset/3pt saddle, Ampacity & Wire Size, Box Fill, Conduit Fill, Voltage Drop, Motor electrical/components
[Resistor Ratio Calculator and RF Pad Calculator](#)

Free
Two versions - Quickly and easily determines the standard resistor values to best approximate a desired ratio

[WiFi Analyzer](#)

Free
Shows the Wi-Fi channels around you. Helps you to find a less crowded channel for your wireless router.

[Sound Level Meter](#)

Free
It displays the current, maximum and minimum values in decibels, and generates sound level charts.

[Speedtest.net network speed measurement](#)

Free
Measure the network speed of your Android device.

[Unit Converter](#)

Free
Convert common units from one measurement to another.

[IPv4 Subnet Calculator](#)

Free
Calculate IPv4 subnets and Ips.

[IPv4 Address Calculator](#)

Free
IP Address calculator, particularly for use with CIDR networks.

[Network Ping Tool](#)

Free
Simple network ping that show stats after it's done.

[Network Scanner/Discovery](#)

Free
Computer/devices discovery and port scanner for local area network.

[SNMP Manager](#)

Free
SNMP manager who has functions, such as a MIB browser, Trap reception, and Trap transmission.

[Bubble Level](#)

Free
Hold any of the phone's four sides against an object to test it for plumb/level, or lay it down on a flat surface for a 360° level.

[GPS Distance and Area Measurement](#)

Free
Turn this application on and walk or drive around a region to measure its area. The path length is measured as well.

[Seismograph](#)

Free
Uses your Android device accelerometer to measure movements in any axis. You can save and export them in CSV files for analysis. Seismo has a high pass filter to remove noise.

[Clean Signal Maps](#)

Free
<http://www.androidfreeware.net/download-electronica.html>
<http://droidmill.com/electrodroid-81320.html>

[http://droidmill.com/fcc-mobile-broadband-test-13089.html](#)

[http://droidmill.com/show-my-white-space-50622.html](#)

[http://droidmill.com/etherguide-94307.html](#)

[http://droidmill.com/pinout-105491.html](#)

[http://www.androidzoom.com/android_applications/tools/subnet-calculator_hjxt.html](#)

[http://www.appbrain.com/app/cidr-calculator/us.lindanrandy.cidr.alculator](#)

[SCTE Supplier Connect](#)

The SCTE SupplierConnect Mobile App is the premier mobile resource for telecommunications professionals. Use it to quickly find products and services, keep up with industry news and events, and stay in touch with the association – all conveniently from your iPhone.

[Cable Loss Calculator](#)

\$1.99
Automatically calculates the amount of loss through splitters and taps taking into account distance and type of cable

[Patch Cable](#)

\$0.99
Make a successful straight through or cross over Ethernet patch cable

[Pinouts](#)

\$0.99
Pinouts includes "at your fingertips" information for pinouts and wiring diagrams for a number of commonly used network, audio, video, computer, and telephone connectors and more

[CableInfo](#)

\$0.99
Get information about cables - image, description and pinout

[AWG Convert](#)

FREE
This great little tool allows you to convert wire diameters expressed in American Wire Gauge (AWG) to diameter and cross sectional area values in metric and imperial units

[WireCalc](#)

\$2.99
Compute the electrical resistance or voltage drop of a wire or cable

[iCable](#)

\$0.99
iCable is an application that shows you how to patch an Ethernet cable into a straight or crossed network cable

[Box Fill Pro](#)

\$0.99
Box Fill Pro is an easy to use app that calculates "Box Fill" requirements for an electrical wiring box

[Transmission Line Calc](#)

\$2.99
Allows you to perform several calculations related to RF transmission Lines

[GaugeFinder](#)

\$1.99
Universal structural steel reference tool

[e-ENGINEER](#)

\$1.99
Provides solutions to a number of commonly used calculations used in electrical engineering

[Extreme Broadband Engineering Mobile Trainer](#)

FREE
Contains: product catalog, product installation guide, product spec sheets, video training library and skills test

[RF Link Calc](#)

\$2.99
Helps you determine the characteristics of an RF link, including Wireless Internet (WiFi) links

[CoaxLoss](#)

\$0.99
Provides a quick and easy way to estimate cable loss for various cables and frequencies

[MicMonitor](#)

\$0.99
Take the input from your iPhone's microphone and output it through the headphone jack, which means you can use your iPhone as an external microphone if you connect a "male-to-male" adapter

[Making of RCA cable](#)

\$0.99
Explains the procedure for making RCA audio cable with "BELDEN 8412" cable and RCA plug

[HTCables](#)

\$0.99
A guide to audio/video cables for your home theatre

[Transmission Line Calculator](#)

\$1.99
Calculates characteristic impedance, effective dielectric constant, and time delay per unit length of microstrip line, strip line, offset strip line, coupled microstrip line, and coupled strip line

[RF ToolBox](#)

FREE
Calculates impedance for designing RF high-frequency transmission line

[Crystal Plug](#)

\$1.99
Useful little tool software to help you make a crystal plug (RJ45/RJ11 plug)

[Bye Bye 4](#)

FREE

[Stanza](#)

FREE

[Free Convert](#)

FREE

[Speedtest](#)

FREE

[Traceroute](#)

FREE

[Electrical Toolkit](#)

FREE

Society of Cable Telecommunications Engineers

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Primers **now available** on WWW.SCTE.ORG,
New ones coming at 2-3 /month, and now many in Spanish

- What are... Carrier Ethernet Attributes?
- What is...Carrier Ethernet?
- What is...eWaste?
- What is... Fiber Cleaning?
- What is...Hex?
- What is...IPv6?
- What is...MoCA? (pt. 1)
- What is...MoCA? (pt.2)
- What is...MoCA Home Networking?
- What is...MoCA 2.0?
- What is...OMI?
- What is...Power Theory?
- What is...Project Management?
- What is...PSIP? (pt. 1)
- What is...PSIP? (pt. 2)
- What is...PSIP? (pt. 3)
- What is...RF Theory?
- What is...RF Spectrum?
- What is...R and U Value?
- What is...Skin Effect?
- What is...Terminated Connector Performance?
- What is...Theft of Service?
- What are...Video Delivery Methods?
- What is...WDM?
- What is...WiFi?
- What are...WiFi Hotspots?

LIVE LEARNING™ WEBINARS



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| <p><u>Advanced Advertising</u> Advanced Advertising in the All-Digital World Understanding the SCTE 130 Technical Specification <u>Business Services</u> Cell Backhaul - Testing and Monitoring Meet SLA requirements Enabling Technologies for Profitable Cellular Backhaul How Does Cellular Backhaul Work? How to Ensure the Big One Doesn't Choke Update on CableLabs® Business Services Winning Architectures for Cable's Business Services Migrating to Business Ethernet Services <u>Service Management</u> Digital Rights Management - Extending Protection Throughout the Home The Holy Grail of Flow - Through Protection <u>DOCSIS®</u> Bandwidth Management and the Impact of Channel Bonding DOCSIS 3.0 - It's Deployment Time DOCSIS® 3.0 Revisited IP Video over DOCSIS® Networks Monitoring and Managing a DOCSIS® Network The DOCSIS® M-CMTS™ Architecture DOCSIS® PreEqualization</p> | <p><u>DTV, IP, and IPv6</u> Adaptive Streaming: IP Video Delivery End-to-End Traffic Engineering -- Challenges IP 101 IPTV a.k.a. Video Over IP IPTV: How It Works and How to Monitor It IPTV - Monitoring, Diagnosis and Analysis IPv6: Deployment Issues and Challenges IPv6 in the Data Center Should Cable Move to IPTV via Video? Migration to an IPv6 Infrastructure The Path to IPv6 in Cable Networks Troubleshooting MPEG2 <u>Emergency Alert System (EAS)</u> Emergency Alert System (EAS) - Is Your System Ready? <u>Fiber Transport</u> FTTx: Friend or Foe? Cable's Fiber to the Home (PON) Overview <u>Fundamentals</u> IP for the Cable Engineer <u>HDTV/3DTV</u> 3DTV: Delivery to the Home An Overview of the DOCSIS® Set-top Box <u>HFC Systems</u> Characterizing Signal Leakage From HFC Networks Managing Linear and Non-Linear Distortion Modern Upstream Best Practices The National Electrical Code: Why Comply?</p> | <p><u>Home Networking</u> Distributing Video in a Whole-home Network Application Securely and Efficiently Home Networking Technologies In-Home Support Services The Emerging In-Home Network, Here Comes Video! <u>Networks</u> Carrier Grade Ethernet Carrier Ethernet Networks: Ethernet Mobile Backhaul Carrier Grade Ethernet: Is Your Network Prepared? CWDM/DWDM - Bandwidth Demand Tamed Deploying Ethernet Transport: Engineering Best Practices Ethernet Service Testing and Monitoring Metro Ethernet and Carrier Grade Ethernet in the HFC Network Migrating to Business Ethernet Services Next Generation Networks: Speed, Services and Solutions – The Cable Network of the Future <u>OCAP</u> Tru2way, OCAP and EBIF - What it means for MSOs</p> | <p><u>PacketCable™</u> An Overview of IP Multimedia Subsystem (IMS) PacketCable™: Architecture, Equipment and Transport Moving to PacketCable™ 2.0 Network Infrastructure, IMS, SIP and PacketCable 2.0™ - Should We Do It? PacketCable™ Multimedia (PCMM): More Than Just VoIP PacketCable™ Reliability in the Outside Plant Downloadable DOCSIS Checklist for the PacketCable™ Reliability in the Outside Plant seminar PacketCable™: Provisioning the Service and Guaranteeing Quality <u>Switched Digital Video</u> A View From the Top: Switched Digital Video Switched Digital vs. All Digital <u>VoIP</u> Troubleshooting VoIP in a DOCSIS Network VoIP Protocols: SIP and MGCP/NCS - SIP and MGCP/NCS Trends in Cable Telecommunications: What's Next? <u>Wireless Technology</u> 802.16 - WiMAX and WMAN: Opportunity or Threat? Seamless Mobility The Integration of Wi-Fi and WiMAX in HFC</p> |
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Live Learning™ Archives

SCTE Leadership Programs with Colleges and Universities



| | SCTE-Tuck Executive Leadership | SCTE-Georgia Tech Management Development | Supervisor 101 |
|-----------------------------|--|--|--|
| Program Focus | Innovation and Leadership | Operations Management | Supervisory Skills |
| Target Audience | Senior level executives with job titles of Sr. Director and above | Management level professionals with job titles from Manager to Director | Managers and supervisors in charge of field level professionals |
| Financial Statements | Participants learn how to leverage and utilize financial statements to create value for their organization. | Participants will learn how to read and understand financial statements and their role with their organization | Participants will only touch on financial statements as they relate to overall metrics for their organization. |
| Strategy Development | Participants will examine the skills necessary to develop a strategic mindset and implement new strategies within their organization. | Participants will discuss the framework of a successful strategy, specifically related to technology. | Participants will review how to better understand how their role impacts their organizations' overall strategy. |
| Personal Growth | Participants will gain insights into the traits and styles that help proven leaders to excel, as well as ways then can enhance their own leadership style. | Participants will review the management styles, leadership characteristics and approaches for dealing with difficult people. | Participants will examine the essential skills necessary to be an effective supervisor. |
| Innovation | Participants will discuss the techniques and principles necessary to allow innovation to thrive with organizations focused on operational efficiencies | Participants will touch on the aspects of change management and the metrics that need to be in place to determine success. | N/A |
| Operations | Participants discover the proper methods to fully integrate an operations strategy with other key business units. | Participants fully examine successful proactive operations management techniques and procedures. | Participants will discuss the necessary skills and activities to maintain efficient day-to-day field operations. |

College and University Partnerships 2



- Take SCTE's online Training Courses and earn credits toward a certificate or degree from FHSU
 - Certificate in Internetworking
 - Associate of General Studies (AGS)
 - Bachelor of General Studies (BGS) with Concentration in Information Networking and Telecommunications
 - Bachelor of Science Degree (BS) in Information Networking and Telecommunications
- Earn a Certificate in Internetworking by taking SCTE's courses and just one FHSU online course
- FHSU's Virtual College offers flexibility of online courses at a reasonable cost

SCTE Professional Development

Business Services



- **Developed Content** (*currently in review*)
 - Enterprise Voice
 - PBX Fundamentals, Structured Wiring, Time Division Multiplexing, ISDN PRI, SONET, TDM Circuit Emulation, Voice Trunking
 - Ethernet Services
 - Ethernet Network Fundamentals, Ethernet Layers 1-3, Ethernet Layers 4-7, MEF
 - Performance Verification
 - Fault Management
 - Customer Soft Skills
- **Next Areas** (*investigating, developing & prioritizing*)
 - Installation, repair,
 - Tools, test & measurement
 - Sales to install cycle optimization
 - Building, equipment, distribution and station wiring
 - Rights of way, easements, covenants
 - Commercial building drops and interfaces
 - Authorized MEF Trainer



**If you are a current member, take advantage
of your SCTE Membership and increase your
technical proficiency.**

**If you aren't a member yet, invest in yourself
and join today!**

www.scte.org