

ETA Education Forum 15 Session Track



March 16-20, 2015 in Las Vegas, NV

COMPETENCE - THE SERVICE ADVANTAGE

By Bill Dow, USMSS

Why do we need to be tested? This session will discuss the role of qualifications in our industry. Come find out what qualifies as certification and why it is important. Bill Dow is the Executive Director of USMSS, the trade association representing servicing dealerships in the Wireless Industry.

Bill Dow, with 31 years of experience, was charged with customer satisfaction and contract administration for the service division of Motorola in Illinois and Indiana before becoming a Service Center Manager in their Chicagoland company-owned service centers. In 1995, Bill departed Motorola and was named Vice President and General Manager of Miner Electronics in Munster, Indiana. Miner's market area includes Chicagoland and Northwest Indiana. He was elevated to President of Miner Electronics in 2006. In September of 2012, Bill left Miner Electronics to become the Executive Director of USMSS. The national trade association represents servicing dealerships of Wireless Communications in the United States.

CERTIFIED SERVICE CENTER - DIFFERENTIATE YOUR SERVICE FROM THE COMPETITORS

By Carla Hurtubise, CSS

The Certified Service Center program is designed as a tool to help consumers find

quality service centers in industries such as appliance, biomedical, RF communications, security systems, and computer service, to help electronics and appliance manufacturers select service centers for in-warranty repairs, and to provide a standard for professional service firms that desire to offer outstanding customer service.

Carla Hurtubise, CSS, has spent over 20 years in customer service and currently sits on the Board of the Consortium of Certified Service Centers. She has been the active C-CSC administrator for five years.

TELECOM WIRING AND TERMINATION TECHNIQUES

By A.J. Wiesenfeld, BSEE

This session will explain the wiring and termination practices that need to be followed so that the telecom and radio communication site installations will be neat and efficient. In addition, they can easily be maintained by any technician or engineer that is familiar with the standard color codes used in the telecom industry. Also, the trouble areas and pitfalls of installation wiring will be pointed out so that they will not be a problem in future installations.

A.J. Wiesenfeld, BSEE, is a California Registered Professional Engineer, and has a FCC GROL. He has been in the commercial radio, manufacturing, broadcast, and telecom industries since 1967. He is the holder of an Amateur Extra Class license.

FIBER OPTIC SENSING

By Greyson Knapp

Fiber Optic Sensing has moved out of the lab into everyday applications. After a brief overview of the basic theory, we will discuss its advantages over traditional methods and the lack of qualified technicians to set up, operate, and maintain the fiber optic sensing systems in a broad spectrum of industries.

Greyson Knapp began his career in Fiber Optics as a fiber optic technician with Sonsub repairing fiber optic ROV control cables and continued on to Western Geophysical with the development and manufacture of their MSX towed array telemetry system. He entered the Cable TV industry at TCI Cable vision (now Comcast) to lead an engineering design group in layout and implementation of a fiber optic backbone. In 1997, he joined in a research effort at Input/Output Inc. developing a seismic towed array based on a passive fiber optic sensing technique. He received several patents for this project and subsequent projects. In 2002, Greyson formed Apex Optics to offer fiber optic solutions to the marine and harsh environment industries. Apex Optics continues to serve on and off shore connectivity requirements and fiber optic training. Apex Optics has joined with FiberSensys and Fibersonics to promote both mature, cost effective, fiber optic sensing solutions for perimeter monitoring and high bandwidth long distance distributed vibration.

DIGITAL VIDEO AT LENGTH: EXTENDING UNCOMPRESSED DIGITAL VIDEO CONNEC- TIONS TO 100 METERS AND BEYOND

By Joe Cornwall, FOI

The importance of dependable digital video connectivity continues to grow exponentially as a plethora of consumer and commercial high definition uncompressed digital sources change the nature of installed A/V. With analog infrastructure all but gone, the ability to deploy point-to-point connectivity solutions that support digital A/V at critical middle distances from 20 meters to 100 meters is vital. Connectivity runs of 20 meters or less are often best served in a native format. Beyond 100 meters we find that IP, fiber and AVB solutions typically provide the better results. But in the important range between 20 and 100 meters, essentially “in room” connections, the need shifts to cost-effective structured wiring to deliver the best efficiency and value. In this presentation, participants will explore the payload characteristics, connectivity topology and essential technologies realized in HD-over-UTP and HDBaseT connectivity solutions. We will also explore “active” copper and fiber interconnect options in depth. This exploration will focus on operational theory, comparative performance metrics and practical application of the technology to common AV installations.

Joe Cornwall, Honored as the 2014 InfoComm Educator of the Year, is regularly recruited to address groups on topics as diverse as A/V technology, system design, future technology trends and market navigation. Cornwall's current industry qualifications and certifications include InfoComm CTS and CTS-D, Imaging Science Foundation ISF-C, ETA Fiber Optic FOI and Digital Signage Experts Group DSCE. He is named as an Adjunct Faculty member of InfoComm International and is a frequent presenter at ISE, BICSI and a number of national and regional events. Cornwall has created nearly two dozen training programs over the last two years alone! Nearly all of these are certified by InfoComm, BICSI, NSCA, and the AIA for continuing education credits. Today, Joe holds the position of Technology Evangelist for Legrand, N.A., where he is responsible for predicting the future and making it happen.

HOW TO EFFECTIVELY USE RF PROTECTION DEVICES

By Ira Wiesenfeld, P.E., CETsr, and
Jay Thompson, CETsr

The manufacturers of RF filters provide to the industry a myriad of devices that are very effective if they are used correctly. The problem is that many technicians and engineers do not know which filter or device needs to be used under which circumstances. This session will explain what devices can be used for which purposes and when they are effective and when they are not.

Ira Wiesenfeld, P.E., CETsr, has been in the commercial radio business since 1966. He has a BSEE, is a licensed professional engineer in the State of Texas, has an FCC GROL, helped write the GROL for the FCC, holds an Extra Class amateur radio license; and is a published author of Wiring for Wireless Sites, along with nearly 60 articles in Urgent Communications magazine and other magazines. He has extensive experience in the commercial radio, broadcast, manufacturing, education, and telecom industries.

Jay Thompson, CETsr, started in the two-way radio business in 1983. From the mid-80s until the late 90s, he traveled the country providing tech support to Indy Car racing teams where he designed and installed the first fuel telemetry system used in the series. While working with ABC sports and ESPN, he won an Emmy for his work in the 1996 summer X games. Jay works with Bearcom as their senior special events technician.

INTRODUCTION TO RFID

By Andre Smalling, CET

RFID is considered the next big phase in information technology evolution. California's passage of an e-pedigree requirement for 2015 will require all members of the supply chain to share data via a single ID number for each bottle of pharmaceutical product. The mandate intention is to reduce incidences of product counterfeiting theft and other problems. This course will cover the essentials of RFID technology. It includes the history of RFID, the uses of RFID, and the different types of RFID and their applications. Finally, this course will give you a comprehensive view of RFID technology.

Andre Smalling, CETsr, graduated from New York City College of Technology with an associate degree in Electrical Engineer-

ing Technology, a Bachelor of Science in Earth and Atmospheric Sciences, and a Bachelor of Science in Engineering Technology. Andre was certified as an electronic journeyman in 1988 by ETA and ISCET and since then has been a subject matter expert in basic electronics, wireless, and industrial certification committees. He has written numerous magazine articles, including RFID, PIM, and others.

TESTING ANTENNA AND TRANSMISSION LINE SYS- TEMS

By Ira Wiesenfeld, P.E., CETsr, A.J.
Wiesenfeld, P.E., Jay Thompson,
CETsr, and Rob Walker, CET

This session will give an overview of when a wattmeter, Line Sweep Analyzer, and PIM tester should be used and what each can and cannot test for. With the 700 MHz channels coming to most localities, the old way of testing antennas does not adequately test for proper operation of the systems anymore.

Rob Walker, CETsr, has been a telecommunications industry professional since 1982. During the past 30 years he successfully started and ran a wireless internet service company, a manufacturer's rep firm, and a technical services company. He is a member of RCA, CMA, and APCO.

THE SMART GRID IN A BROADCAST WORLD

Critical Infrastructure Roundtable
with Christopher Miller, Heartland
Community College

As Smart Grid applications advance, they continue to increase their demands on communication system architectures. Choosing an appropriate, enabling communication subsystem is essential to ensure that the applications are served with the necessary communication capabilities. Evaluate capacity, narrowband, SCADA, Smart Grid Distributed Intelligence applications, and the effect of unlicensed wireless technologies on the smart grid.

Chris Miller is a professor at Heartland Community College in central Illinois and has been an instructor for 14 years. He is a ham radio operator, N9RKD, instructor of GROL, and installer of solar. He also is in the Coast Guard Auxiliary in the communication field.



The Next Level

Get Hands-On Training and Certification at one co-located event:
**ETA's Education Forum 15 &
International Wireless Communications Expo
March 16-20, 2015 in Las Vegas, NV**

> **HANDS-ON TRAINING** > **CERTIFICATION** > **NETWORKING** > **JOB FAIR**

* **Fiber 1-2-3** by Light Brigade



Core course features comprehensive hands-on instruction in multi-mode and singlemode technologies.

Multimode fiber technology featuring OM3, OM4 and bend insensitive fibers; Restricted mode and encircled flux launch conditions; Single-mode fiber technology including G.652D, G.655, and G.657 fibers; The newest termination products and techniques; Up-to-date standards and specifications; Fiber-to-the-Home, Ethernet and Internet protocol; Expanded installation and optical testing content; The latest active devices including FTx products; In-depth information on passive devices such as optical switches and splitters

\$1,849 Includes Study Materials, Monday-Thursday
Fiber Optics Installer (FOI) ETA Certification Exam Included (\$150 Value), Test Friday

* **Fiber To The Antenna** by Dr. Tommy Bonner, FOT



This course is for site integrators, contractors and construction companies

who install fiber optic cables at wireless and cellular facilities. The student will learn how to prepare and install premade fiber cable assemblies on the tower; how to test the fiber after installation and how to identify problems during and after installation. The course will cover basic fiber safety and optical transmission theory. Core concepts such as fiber optic cable types, modes, construction, installation and maintenance and testing are covered as well. Much of the course is hands-on with a focus on the carrier Method of Procedure (MOP).

\$599 Early Bird through 2/4/15, **\$699** Late & On-Site, Includes Study Materials, Monday-Tuesday
Fiber To The Antenna (FTTA) ETA Certification Additional \$100, Test Wednesday or Friday

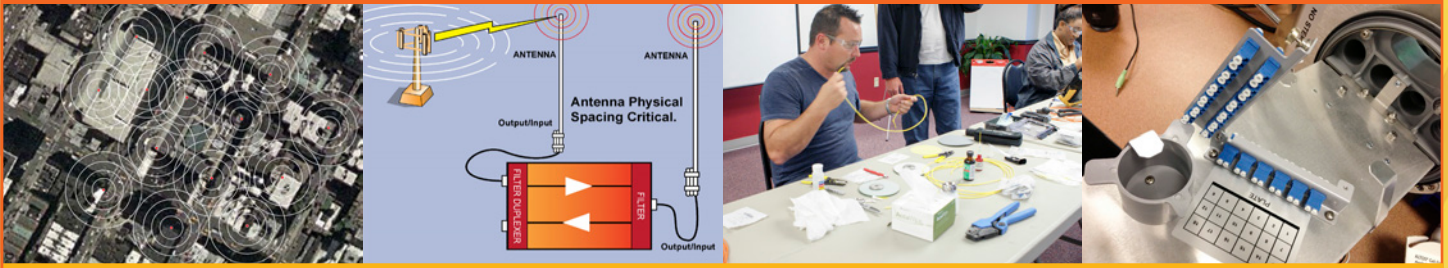
* **General Communications Technician, Levels 1 & 2** by Ira Wiesenfeld & Associates



Expanding on the US Department of Homeland Security COMT program, GCT

covers everything needed to complete your ETA certification. These areas include: basic electronics, fundamentals of radio, tools, test equipment, power systems, cabling and installations, environmental systems, antennas, transmission lines, towers, operating principles and details on radios and radio systems, serial data and IP networks, basics of fiber optic lines and systems, telephony, satellite communications, physical plant considerations, site procedures, and safety practices.

The GCT Level-1 certification program centers on concepts and basics and is designed to prepare students for successful careers in telecommunications. The classes will be geared toward new technicians and engineers and their level of experience. Hands-on training for the beginner level will be included. Tools and a DMM will be provided to each student who pre-registers before March 1, 2015.



The GCT Level-2 certification program enhances the skills of those already in the industry and delves into the details that are found every day when working in the telecommunications industries. The classes will be geared toward the more advanced level of industry experience. There will be advanced hands-on training included. Tools and a DMM will be provided to each student who pre-registers before March 1, 2015.

*For those who are interested, the fundamentals of LTE will be presented as an optional class segment at the end of the GCT-Lv2 class each day for no additional fee and in a fashion to keep the more experienced students up-to-date on the technology that is evolving today. Topics include: Evolution of Cellular Technologies, Wireless Fundamentals, LTE Standards, The Physical Layer, Multicarrier Modulation, The Future of Wireless.

\$599* Early Bird through 2/4/15,
\$699* Late & On-Site, Includes Study Materials, Monday-Tuesday
 *Levels 1 & 2 are two separate courses and require separate registration
 General Communications Technician (GCT-L1) & (GCT-L2) ETA Certifications Additional \$100 each, Test Wednesday or Friday,

*** Distributed Antenna Systems**
 by Dover Telecommunications Systems



This course is for anyone interested in learning about the fundamental theories,

components, installation, maintenance and support of in-building Distributed Antenna Systems. Students completing this course will better understand how DAS systems work, how they are designed, and why the design is critical to proper operation. Exposure to RF energy and related safety subjects will be addressed.

\$799 Early Bird through 2/4/15, **\$849** Late & On-Site, Includes Study Materials, Monday-Tuesday
 Distributed Antenna Systems (DAS) ETA Certification Additional \$100, Test Wednesday or Friday

*** Interference Hunting**
 by Dover Telecommunications Systems



It will provide theoretical and practical fundamentals needed to effectively identify and locate radio frequency interference issues in any band or network. It begins with an overview of basic RF principles, signal types, propagation and spectrum allocation. Practical applications include interference hunting tools, the use of monitoring receivers, spectrum analyzers and drive test tools. Methods



of radio location (direction finding) and signal analysis will be demonstrated using live signal sources and hands-on exercises.

\$799 Early Bird through 2/4/15, \$849 Late & On-Site, Includes Study Materials, Monday-Tuesday
 Radio Frequency Interference Mitigation (RFIM) ETA Certification Additional \$100, Test Wednesday or Friday

*** Associate Certified Electronics Technician**
 by Fred Weiss, CET



The Associate CET is designed for technicians who have less than two years experience or trade school training for electronics technicians.

Topics covered include: DC Electronics, AC Electronics, Components & Semiconductors, Analog Circuits, Re-cabling & Telecommunications, Digital Circuits & Microprocessors, Troubleshooting, Test Equipment & Repair, Shop & Service Management.

Every Certified Electronics Technician (CET) candidate must pass the Associate exam before they can qualify to sit for the full Journeyman certification. Once a technician has completed the four year term, they should specialize and take a Journeyman option.

\$350 Includes Study Materials, Wednesday-Thursday
 Associate Certified Electronics Technician (CETa) ETA Certification Additional \$60, Test Friday

Register Today! www.educationforum.info