The Spectrum

Newsletter of the Rocky Mountain Chapter

February 2007

Letter from the President

Rocky Mountain Colleagues,

First, the Board would like to thank all of you for great 2006; we look forward to serving you in 2007. I will give a quick up date on the elections, we as Board want to thank all the candidates for showing an interest in the chapter, and I invite all the candidates to join us during the board meetings this year, your insight is greatly needed. Newly elected to the board this year is Sherisse Hawkins from Time Warner and Steve Murphy from Comcast. Both have excellent experience that will add value to the SCTE. They both have already begun to contribute to the success of the chapter. Please welcome them when you get a chance.

Our strategic planning session was a very important to assist our Chapter in lining the topics that you all want to see or learn about. The board members had received feedback from many of you on desired new topics and continuation of established subjects. We had a lively discussion on what we needed to cover. We will have 3 of our 9 seminars outside of Denver. They will be in the Western Slope,

Northern Colorado, and one down South in Pueblo and Colorado Springs. We are going to continue with the popular Digital Measurements, IP, and return path topics. We are also going to turn our focus on SVD/IP (Switched Video-IP) side of the technology. The VoIP topic is still a very hot topic, National SCTE will be having a conference at the Cable Center. We are also going to covering DOCSIS 3.0, and a much requested Home Theater, Networking and Cable Card seminars. You will also hear our board members talking before each seminar on ways our members can augment their leadership capabilities. This is an interest that has been voiced by many of our professionals. As our teams expand their technical skills, the ability to apply them with an intuitive leadership style is an important need now being noticed throughout our operations.
As mentioned, our Rocky Mountain show Symposium will be September 11th, and 12th 2007.
So as you can see we have hit the New Year running. We are off to a great start to a year that will prove to be a busy and exciting time for our Chapter participants. We'll see you at up coming events.

Thanks,
Dave Krook

2007 Chapter Events

Pre-seminar openers (10 to 15 minutes) are planned before each event and subjects will include: SCHOLARSHIP OPPORTUNITIES, PROFESSIONAL "D"EVELOPMENT WITH ALAN "B", BENEFITS OF CERTIFICATION, and TELECOM INDUSTRY SAFETY-WITH-SNIDER.

DATE	LOCATION	SUBJECT	SPEAKER
March 29th	Comcast Denver Iliff office	In Home wiring, Tap through CPN to CPE	TBD
March 12 & 13	Jones/NCTI Centennial, CO	VoIP Conference, SCTE National sponsored	Lined up by National - see flyer below
May 24th	CableLabs Louisville, CO	Switched Digital Video (SDV) & IP Video	TBD
July 12	Comcast Mineral in Littleton	Digital Signals/VoIP Troubleshooting	TBD
August 9th	Grand Junction or Glenwood Springs (Bresnan territory)	TBD	TBD
Sept 11th and 12th	Inverness Hotel and Golf resort	Golf Tournament and Cable Games, Tech sessions to include Tools for Troubleshooting, Portability Wi/Fi	TBD
October 18th	Jones/NCTI Centennial, CO	Home Theaters, Networking, CableCards	TBD
November 15th	Pueblo or Colorado Springs	Return Path, GIS Troubleshooting Leveraging CPE	TBD
January 10th, 2008	Comcast Iliff or CableLabs	DOCSIS 3.0	TBD

Certification testing will be offered at each of these events; please RSVP in advance!

Warning:

Network and Systems Reminder for early Daylight Saving Time

When we change our clocks

Since 1966, most of the **United States** has observed Daylight Saving Time from at 2:00 a.m. on the first Sunday of April to 2:00 a.m. on the last Sunday of October.

Beginning in 2007, most of the U.S. will begin Daylight Saving Time at 2:00 a.m. on the second Sunday in March and revert to standard time on the first Sunday in November. In the U.S., each time zone switches at a different time.

Description

Daylight Savings Time changes have been mandated by the Energy Policy Act of 2005 (H.R.6.ENR), Section 110. These changes will go into effect in March 2007.

The operating systems of many products that support Daylight Saving Time (DST) have built in mechanisms to automatically change the times, based on current United States rules. Once the new act is implemented, the time on devices that maintain time zone information will continue to change according to the old rules, unless changes are made.

Background

On August 8, 2005, President Bush signed into law the Energy Policy Act, which extends DST by four weeks from the second Sunday of March to end on the first Sunday of November. The Secretary of Energy will report the impact of this change to Congress, and then Congress retains the right to resume the 2005 Daylight Saving Time schedule once the Department of Energy study is complete. This law takes effect March 1, 2007.

	Prior to 2007	Year 2007 and After
Start	1st Sunday in April	2nd Sunday in March
End	Last Sunday in October	1st Sunday in November

The Energy Policy Act of 2005, bill number H.R.6.ENR, can be found at The Library of Congress, THOMAS. http://thomas.loc.gov/ . Search for **daylight savings** to find the Act in various stages.

Potential Problem Symptoms

The potential problem is that the "system time" and all timestamps will be incorrect by an hour for three weeks in the spring and one week in the fall for the year of 2007 and beyond, unless the steps described in this notice are taken.

This can have a major impact on any event correlation activities that are performed as part of normal operations, troubleshooting, and monitoring.

For example, Call Detail Records, where logs may be captured, correlated, and stored for billing purposes, could be rendered incorrect for situations where they need to be recalled to rebuild a sequence of events. The incorrect timestamps may not be an issue for events that get immediate action, but future reference back to these events would reference incorrect times.

In addition, any device with time based controls and activities, such as authentication servers, synchronization activities, and scheduled events such as batch jobs, timed backups or automated scripts would be impacted.

Workaround/Solution

To comply with this government mandate, Vendor companies have begun to take the necessary steps to conform to the new US Daylight Savings Time standard that will begin in March 2007.

Society of Cable Telecommunications Engineers

Troubleshooting Voice Over Internet Protocol (TVoIP)

March 13-14, 2007 in Denver, CO

This Seminar will be presented at the Jones/NCTI facility 9697 East Mineral Ave., Centennial, CO 80112

Description:
The *Troubleshooting Voice over Internet Protocol (VoIP)* seminar is designed to introduce participants to the practical aspects of troubleshooting IP voice service as delivered over a broadband HFC network at both the IP Layer and the DOCSIS layer. The goal of the Troubleshooting Voice over Internet Protocol (VoIP) workshop is to reinforce participants' existing knowledge of VoIP and develop new knowledge and skills relating to the isolation and resolution of real-world VoIP technical problems.

Audience: Technical operations managers, plant managers, technical supervisors, project managers, senior technicians and engineers who have responsibility for operating and maintaining VoIP systems

Seminar Objectives
Upon successful completion of this course, the student will be able to:

- Discuss characteristics associated with the PSTN
- Examine PacketCable VoIP systems, including provisioning, call set-up, call tear down and providing QoS
- Identify common VoIP end-user symptoms and possible network causes
- Demonstrate troubleshooting “best practices” utilizing currently available networking tools and test equipment

Modules

- Module 0 - Course Introduction
- Module 1 – The PSTN Overview
- Module 2 – PacketCable Architecture
- Module 3 – Impact of IP Impairments on Voice quality
- Module 4 – Impact of RF Impairments on Voice quality
- Module 5 – eMTA Issues
- Module 6 - VoIP Switch Fundamentals/ Troubleshooting
- Practical – Troubleshooting Practice on a Live VoIP Network

Registration Fees:
Member - price: $299.00
Nonmember - price: $399.00

Register here: http://www.scte.org/content/index.cfm?pID=18#voip.
www.scte.org Under Education/Online Seminars

sign in from 7:45 a.m. - 8:30 am
Jones/NCTI facility 9697 East Mineral Ave., Centennial, CO 80112

By agreeing to serve, the Board pledges to support the telecommunications industry and the participants of the Rocky Mountain Chapter of the SCTE.

2007 Elected Board of Directors

Name		Company	Phone Number	Position
Dave Krook	David_Krook@cable.comcast.com	Comcast	303-603-2095	President
Joe Thomas	jthomas@tropicnetworks.com	Tropic Networks	303-953-1386	Vice President
Steve Murphy	Steve_Murphy@cable.comcast.com	Comcast	720-267-3038	Treasurer
Nick Segura	Nick.Segura@chartercom.com	Charter Comm.	303-669-3705	Secretary
Lauri Smith	Lauri_Smith@cable.comcast.com	Comcast	720-267-7563	Board
Pat Wike	Pat_Wike@cable.comcast.com	Comcast	303-603-5052	Board
Rex Kohart	Rex_Kohart@cable.comcast.com	Comcast	303-603-5053	Board
Alan Babcock	ABabcock@jonesncti.com	Jones / NCTI	303-797-9393	Board

'Friends' of the Board

Name	Company	Phone Number	Position
Frank Eichenlaub	Scientific Atlanta Division of Cisco	303-790-6659	Website Region 2 Director Board
Dave Robinson	EquiVision	303-722-8920	FOB
Randy Bailey	Comcast	719-457-4690	FOB
Jim Garcia	Comcast	719-457-4517	FOB
Robert Kostelny	DTI	303-995-6689	FOB
Richard Covell	TTSI	303-646-5050	FOB
Hugh Long	Comcast	720-267-3026	FOB
Mark Thompson	CommScope	303-773-3003	FOB
Jim Feola	James Associates	303 841-3391	FOB
Jim Stewart	Comcast	303-603-5687	FOB

Tech Forum

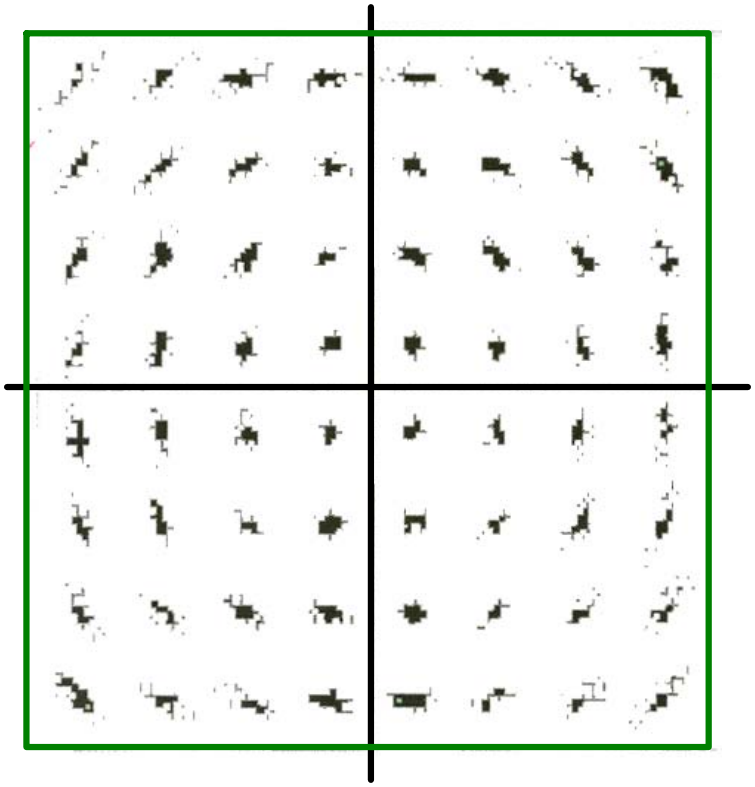
Jim Stewart

Welcome back to “The Tech’s Forum”. This section of the SCTE newsletter features articles and tips for technical personnel of the CATV Industry. Ideas and articles for “The Tech’s Forum” are always welcome. If you would like to contribute please contact me at jim_stewart2@cable.comcast.com.

In the last several editions of “The Tech’s Forum”, the testing and analysis of digital signals in an HFC network has been discussed. The identification of a few more impairments using the constellation display of a digital analyzer will be covered in this edition.

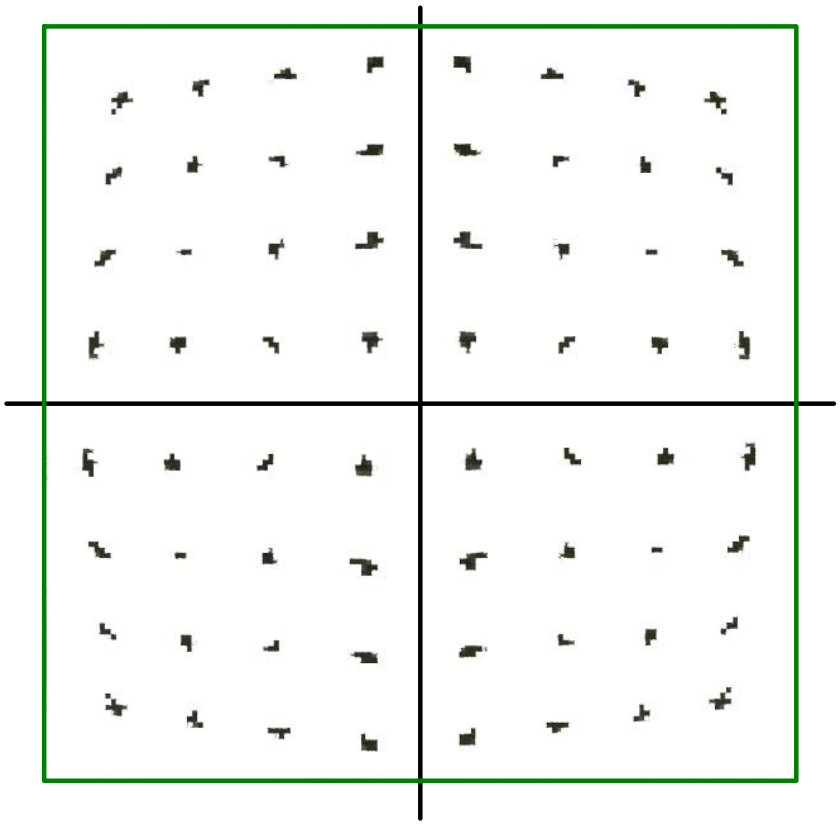
As explained in the last Tech’s Forum, Quadrature Amplitude Modulation uses combinations of phase shifts and amplitude shifts to represent information. The constellation display is a graphical representation of those amplitude and phase combinations. The patterns of the dots in the constellation can be used to help diagnose digital signal transmission problems.

A constellation that appears rotated around the center of the graph indicates phase noise (Figure 1). A defective modulator or processor at the Headend is usually the culprit.



Phase Noise Figure 1

Gain compression can be identified by a constellation that has corners that are pulled in while symbols closer to the middle of the constellation are not affected (Figure 2). This can be caused by overdriving an amplifier or processor. A defective amplifier or processor can also be the source of the problem.



Gain Compression (Figure 2).

In the next edition of the “Tech’s Forum” we will discuss some other methods of identifying problems with digital signals.