11-2002

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eNEWS

Quality of Service: Different Strokes for Different Folks

From the President
Jeanne Jansenius
University of the South

The concept of Quality of Service (QoS) has been around for years but is vigorously being held under the magnifying glass in the area of VoIP. I am always amazed how the consumer will tolerate jitter and loss of signal on wireless voice service offerings, but expect total QoS when using time division multiplexing (TDM) or voice over IP (VoIP). I chuckle a little when I see Sewanee students standing outside buildings in the pouring rain trying to establish a strong enough signal to make their wireless call, or when I am in the middle of a conversation with my daughter and she states "I will call you back in a minute if we lose the signal; I'm getting ready to go through a tunnel." Customer acceptance of QoS varies depending upon the type of service offerings.

In the traditional PBX environment the consumer demands a non-blocking device along with multiple conversations being carried out all at one time. PBX QoS is controlled by a particular grade of service (GoS) expressed as a low-call-blocking probability.

In contrast, VoIP delays must be less than 150 milliseconds and voice packets must be played out at a uniform rate to avoid jitter. As analog voice signals are digitized and transmitted as packet streams over an IP network, packets automatically find the most efficient path to their intended destination and then spread out over many different paths, arriving with different end-to-end delays, arriving out of sequence, or not arriving at all. Once they reach their destination, packets are reassembled and then converted back to their analog signaling. How do we guarantee that there will be no loss of signal or jitter? Do we really need to guarantee this?

When going from a TDM environment to a packet environment, it is important to understand that you will have the same carryover of QoS issues that are already unique to the packet networks.

Elements of a typical PBX Environment:

- Central Processor
- Switch Matrix
- Line Cards
- Trunk Cards
- Power Supply

In This Issue

Quality of Service...

Elements of an IP-PBX Environment:
- Central Processor- the server
- Switch Matrix- the LAN and LAN switch
- Line Cards & Trunk Cards- gateways and routers
- Power Supply-more difficult to the desktop as power supplies need to be considered for each building

The first approach to QoS in an IP environment is over-engineering the bandwidth. This concept, in the best of times, is a short-term fix. The second approach to IP QoS mechanisms is the Internet Engineering Task Force (IETF's) Differentiated Services (DiffServ) architecture, which provides a mechanism for voice traffic (and signaling) to be handled on a priority basis (http://www.ietf.org/). When planning for any well-managed network, QoS is an essential element, at least in the Layer 2 and 3 packet marking and queue management mechanisms. In the LAN environment it becomes necessary to replace legacy hubs with switches that observe standard class of service (COS), type of service (TOS), and DiffServ packet markings that use queue management to assure congestion does not delay VOIP.

Other standards that impact QoS might include:

- **Resource Reservation Protocol (RSVP)**: informs routers and switches about the QoS requirements, thus correcting jitter and latency

- **The 802.1p:** attaches a header that identifies the packet being sent as crucial for time-critical applications such as videoconferencing

- **QoS manager software**: defines how to use network resources and specifies the bandwidth to allot, thereby making it essential that service providers agree on which standards to use and how they should be implemented. Unfortunately for the consumer, standards for policy-making software being addressed to support QoS are still, in most cases, vendor specific.

Gary Audin, president of Delphi, Inc., and friend of ACUTA, offers in his article in *Business Communications Review,* "Reality Check On Five-Nines," some wonderful examples of availability and reliability. Gary states, "I'm willing to bet that few actually know what 99.999 percent really means, and even fewer know if it's really necessary. Of course, we all know that five-nines relates to reliability, and expectations are high—dial tone is expected at all times." (http://www.bcr.com/bcrmag/2002/05/p22.asp) Are five-nines necessary, or will the consumer tolerate occasional jitter and loss of signal in the VoIP environment?

I will end this 10,000-foot view of QoS, inviting you to decide for yourself its importance on your campuses, by stating if voice quality suffers, then fond memories of the PSTN will haunt the balance of the conversation. It is also important to back off and look at the big picture from time to time to remind ourselves of the things we do right and well. QoS is many-sided and has many facets, but it doesn't mean we—or the services we provide—are perfect all the time.

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FYI

FYICAP, iCal, SyncML, FTTH, LDP...

Confused by new lingo you can't decipher? *Network World Fusion* provides an online dictionary of terms and acronyms. Check it out at
http://napps.nwfusion.com/links/Encyclopedia/index.html.

Internet Telecommunications Relay Services

by Dave Ostrom
Washington State University

A new feature of Telecommunications Relay Services (TRS) has the potential to significantly increase the functionality of TRS and may help colleges and universities to provide better and increased access to TRS.

Traditionally, TRS has allowed anyone who has a hearing or speech impairment, or a person who wished to communicate with a speech- or hearing-impaired person, to use a text telephone (TTY) or standard telephone to communicate over the phone lines. The caller dials a TRS access number that is answered by a communications assistant who first dials the destination number and then provides skilled translations between TTY and voice messages. Over the years, TRS has expanded to include Spanish relay services and variations of the relay service such as voice carry over (caller can speak but not hear) and hearing carry over (caller can hear but not speak). Charges for TRS calls have been billed back to the caller if a direct call to the destination number would have resulted in toll charges.

As the use of the Internet expanded, both the carriers and the FCC realized that the use of the Internet to access TRS had the potential to open up TRS access and to increase its usability. However, implementation was stalled as it was not possible to determine the location of the Internet user. In April 2000, the FCC eliminated this roadblock by agreeing to reimburse carriers for all calls while charging methodologies were developed. (Pay-per-call numbers such as 900 numbers still require a credit card or some other type of billing mechanism.) As a result, AT&T, Sprint, and WorldCom have all implemented Internet Relay Services on the Web.

The Web sites offer valuable features not available on most text telephones such as the ability to print the entire conversation, change background colors, increase text size, etc. Currently the service is free except for pay-per-call services. TRS users should be able to benefit from the new capabilities while colleges and universities may also benefit by encouraging willing users to use the Internet. This may eliminate the need to provide analog jacks in residence hall rooms (where digital jacks are normally provided) and should eliminate the need to permit TRS calls to be charged agains the caller's residence hall numbers.

The addresses for the Internet Relay services are as follows:

AT&T: http://www.relay.att.com/national/index.html

Sprint: http://www.sprintbiz.com/government/internet_relay/

WorldCom: http://www.ip-relay.com/index.jsp

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Sailing the Seven "C"s

by Mick McKellar
MIchigan Technological University

At one time, management was focused on one C, and only one C: Control. Management controlled information, performance, budgets, and people. At least, that is what they thought. Time and experience have taught some hard lessons about the illusion of control, and the management team of the 21st Century sails on at least seven Cs: communication, convergence, collaboration, cost, culture, commonweal, and compassion.

Communication

Much has been said about communication during centuries in which man has attempted to pass understanding from one person or group to another person or group. The need has always been the same: transfer meaning and, if possible, store it for future retrieval. The method changes by the minute. What once was face-to-face and written document communication, is now voice over IP, digital imagery, text, and video communication.

The pace of written and face-to-face communication supported the illusion of control over the process, but experience with the fast-paced action of electronic messaging and digital communication has stripped away the illusion, leaving us a little breathless and concerned. How does one stay afloat on this choppy C?

· Remember that fast communication does not mean hurried and sloppy decision making. Allow time for proper consideration of the information you can access so quickly.

· Keep electronic files in an organized filing system, in a secure location, and in an easily readable format.

- Practice triage—be ruthless with useless data and junk e-mail.
- Keep the clutter down and clean your desktop.

Convergence

Convergence means, simply, coming together at some point. In an applied sense, convergence means that all the disparate tools of our trade are becoming a unified and cohesive tool kit, linked by electronic and digital means. As the tools converge, their functions become blurred and confusing. What to do?

- Approach with caution and study the topography. You need to know the individual functions before viewing the unified whole.
- Ask what you gain from the convergence, and should you promote it, or "ride with the tide."
- Stay on top of the changes. You cannot reverse them; you can only try to understand them and make the most of the benefits.

Collaboration

In years past, working shoulder-to-shoulder on a project meant just that. Proximity was the defining factor. Now, tools exist that permit collaboration, not only over long distances, but also over time—asynchronous collaboration—tieing global resources together despite time differences. Although the advantages are obvious, the problems can be vague and invisible—initially. Time differentials can confuse project planning, and not everything can be done electronically, so items that were not time-sensitive before, become critical path elements to cause shipwrecks. How does one navigate these waters?

- Define clearly what is electronic- and what is physical-world constrained.
- Map a project carefully, redesigning around new critical paths.
- Keep the entire team in the loop, encouraging commentary and perspective from those with a parallax view.

Cost

Budgets don't go away in digital days; they become larger, faster, and more volatile. Prices change constantly, vendors come and go like lightening, and e-commerce can leave you wondering if the check really is in the mail. Equipment needs change with software changes, and with increasing demand. Software needs change as companies upgrade and repair software and respond to consumer demands and market pressures. Employees need training and support, and the network and the Internet itself are constantly under attack, requiring expensive and time-consuming security measures. What to do?

- Hire a good crew. They are the most expensive part of your organization and need the most care.
- Get the hardware you need to run the software your business demands and will likely demand for a reasonable future.
- Don't make sudden changes, which tend to confuse employees, slow production, and open security holes.
- Remember, your biggest security risk is your people—take care of them so they help take care of you.

Culture

Each person on your staff has a personal culture, interacting with the culture of your organization, interacting with the culture of your customer base, interacting with the culture of the region and the whole world. Gene Roddenberry originated the concept of Infinite Diversity in Infinite Combinations (IDIC) with his Vulcan race in Star Trek. The diversity of culture in today's world does indeed seem infinite. How do you boldly go where no one has gone before?

- Understand that organizational culture exists. The first step in avoiding a reef is recognition of its existence.
- Don't try to understand all cultures; try to understand diversity and learn as much as you can about the many cultures with which you must interact.
- Appreciate that your employee's, boss's, and customer's culture is as important to them as yours is to you.

Commonweal

Commonweal is an old term that means common welfare or commonwealth. If your employees, bosses, colleagues, and customers know that your actions demonstrate your consideration of the common good, (i.e., everyone benefits), they will trust that your actions will lead them to a good place. How do you spin the commonweal?

- Try a little Gestalt — put yourself on the other end of that e-mail you plan to send and experience how you feel receiving it.
- Reward your crew for a job well done.
- Take responsibility as well as credit.
- Pass the kudos, please.

Seven "C"s...

Compassion

Compassion is the result of empathy, not sympathy. Unexpected acts of kindness and consideration are not a sign of weakness, but an indication that you are paying attention. Can compassionate captains calm the Cs?

· Remember the doctor's oath: first, do no harm.
· Consider that compassion contains "passion."
· Resist the urge to say, "I know how you feel..." You don't, really, but they'll know if you make the effort. Your actions will demonstrate compassion.

Conclusion

We've been sailing seven Cs in search of better ways to manage. Obviously, there are more Cs to consider. I've always found it compelling and coincidental that the letter C starts so many words that apply to management and just getting along with one's colleagues. Cooperation, consideration, coexistence, calm, common sense...

I hope this exercise in punsmanship and imagery offers a different perspective on management and collaboration, on leadership and support, and on mindset and attitude. C things differently. C life as an adventure. C what I mean?

Thanks to Exhibitors for 2002

ACUTA thanks the following companies for exhibiting at our 2002 events. In addition to providing attendees with the latest information on products and services, the exhibit hall generates revenues which help keep registration fees low. As you choose the companies with whom you do business, we hope you remember these ACUTA supporters.

FOUR EVENTS

Amcom Software	PaeTec Communications	Teledex, LLC
AT&T	Phonetic Systems	T-Metrics, inc.
Bitek, Inc.	Professional Computing Resources	VarTec Telecom/eMeritus Comm.
Compco, Inc.	Startel Corporation	WTC
MiCTA	System Development Co. of New Hampshire,Inc.	

THREE EVENTS

1 Nation Technology
CBi
FASTNET
Philips Speech Processing
Telesoft Corp.

TWO EVENTS

ACE*COMM	
AMTELCO/1Call Campus	PB Exchange, Inc.
Daycom Systems, Inc.	Qwest Communications
EPOS Corporation	Scitec, Inc.
Parlance Corp.	Spectrum Industries
	STC Services

ONE EVENT

A1 Teletronics	Expanets	PWR
ADTRAN	GAI-Tronics Corporation	R.G. Vanderweil Engineers, Inc.
Alcatel Internetworking	Info Group	RCC Consultants, inc.
Amtel Technologies	Integrated Solution Services, Inc.	Ring Communications, Inc.
Archi-Technology, LLC	Interactive Intelligence, Inc.	SpectraCorp
ATL Enterprises, Inc.	Leviton Voice & Data	Sprint
Avotus (Formerly MDR Switchview)	LINK Conference Service	SUPERIOR ESSEX
Bluesocket, Inc.	LocusDialog	Talk-A-Phone, Co.
Campus TeleVideo/NetGen Video	Matsch Systems	TeleMatrix
CEECO	McLeodUSA, Inc.	Telispire PCS
Cflix, Inc.	Metropolis Technologies	Teltronics
Code Blue Corporation	MicroWarehouse	Terawave Communications
Commonwealth Communications, Inc.	Mitel Networks	Tone Commander Systems
Comview Corporation	Mohawk/CDT	TouchNet Information Sys., Inc.
Conveyant Systems, Inc.	NEC America	Touchpaper Corporation
Corporate Telecom Solutions	Nextel Communications	TVC Communications
Cortelco	Optus	USF Technology Services, Inc.
Data Connect, Inc.	Packeteer, Inc.	Utilitech, Inc.
DESI Telephone Labels, Inc.	Panduit Corporation	UT Startcom, Inc.
Engineering Associates, Inc.	PenCell Plastics	Veramark
	PhoneReview	Vibers Technologies
	Pingtel	WorldCom
	Proxim	XTend Communications Corp.
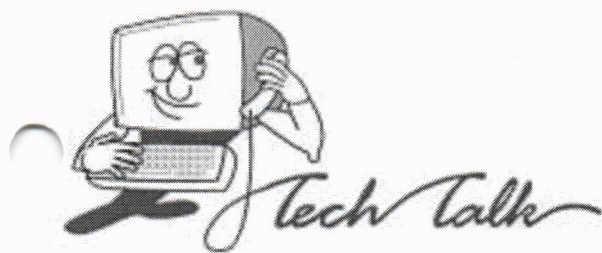
by Kevin Tanzillo
Dux Public Relations

Let's Get Shaking on SALT Applications

You know how on nearly any version of Star Trek, they can just talk to the starship's computer? They don't mess around with keyboards or mice or other clumsy tools to interface with it.

Keyboards and mice are _so_ 21st century!

We may be taking those first small steps into the future for voice, thanks to a new approach to extending the functionality of Web programming models and markup language. It goes by the acronym of SALT, for Speech Application Language Tags.

The emphasis of SALT is to create speech interfaces that work right alongside the traditional input-output styles such as text, audio, video, and graphics. The goal: access to Web content through a wider variety of devices, including telephones.

SALT is designed to make it easier for developers to add speech recognition and synthesis and telephony capabilities to HTML- or XHTML-based applications, which makes these applications accessible from telephones or other GUI-based devices such as PCs, telephones, tablet PCs, and wireless PDAs.

Voice-enabled capabilities make it possible for businesses to offer common Web-based applications across multiple presentation media, without having to create discrete applications for each type of output. Service providers can leverage these capabilities to offer new services and generate additional revenue. The user can take advantage of speech, text, or graphical interfaces independently or simultaneously.

One of the places SALT is expected to have the greatest impact is in wireless devices, those increasingly ubiquitous accessories that encourage you—heck, they practically beg you—to access the Internet with them, but then they make it physically challenging, to say the least. Speech is ideal there as the input method.

SALT will also, in general, give the Web developer new tools to simplify authoring speech-enabled applications, whether they are accessed from wireless or wireline devices.

In a university setting, for instance, you can picture a scenario in which callers could access a range of information about the institution from a phone call, perhaps as a routing option from the university's call center, or even as a separate number. Or if you do dial-in class registration, this would greatly broaden students' options.

On the corporate side, SALT has great potential in areas such as call centers, sales force automation, customer relationship management, Web-based self service applications, or simply for employees who would benefit by using a hands-free input method to deal with Web-based forms. Earliest adopters are likely to be those industries that already embrace speech recognition and IVR, such as travel, banking, telecom, and finance.

Whatever applications you may have in mind, though, they're going to have to wait. Even though some equipment vendors are already SALT-enabling some of their products and platforms, the best bet is it will be about a year—by the time they snake their way through the standards process—before SALT applications hit the street. It would sure be easy here to insert some lame pun about "SALTing the streets," but we won't stoop that low.

Of course, no legitimate technology dares to stick its head above ground anymore if it doesn't have an industry group of its own. SALT has the SALT Forum, which counts among its members such familiar names as Cisco Systems, Intel, Microsoft, Philips, Compaq, Siemens, and InterVoice-Brite. It is an unincorporated joint initiative of companies who want to see speech recognition and synthesis technologies become pervasive. Earlier this year, the SALT Forum released Version 1.0 of the specification and submitted it to the World Wide Web Consortium for consideration by committees working on standards for voice browsers and "multi-mode" applications.

The SALT Forum goal is to create an open, royalty-free and platform-independent specification to extend existing Web markup languages for speech input and output. For more information, check out the group's Web site at www.saltforum.org.

As always, if there are specific topics you would like to see covered in this space, please let me know via e-mail at kevin@duxpr.com.

ACUTA LEGISLATIVE & REGULATORY AFFAIRS COMMITTEE
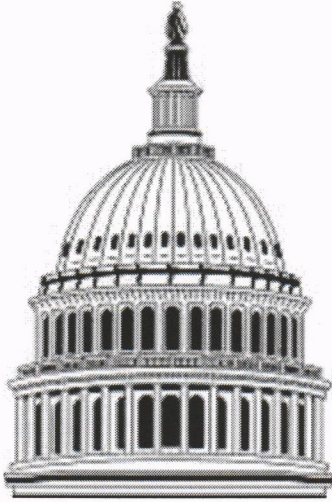
D C Update

Whitney Johnson
Northern Michigan University
(Retired)

ACUTA members may read about the latest developments in telecommunications- and Internet-related issues in the most recent **Legislative and Regulatory Update,** an electronic newsletter prepared monthly by Wiley, Rein & Fielding. Access this newsletter at http://www.acuta.org/relation/DownloadFile.cfm?docNum=309

Mobile Phone/Cancer Connection

Two U. S. researchers who reviewed a myriad of epidemiological studies on the relationship between the use of mobile phones and cancer have concluded that no such link appears to exist. The researchers are of the opinion that "a consistent picture has emerged from these studies that appears to rule out, with a reasonable degree of certainty, a causal association between cellular telephones and cancer to date." (*Telecommunications Reports* 10/1/02)

Cable TV Multiple System Operators

Some of the large cable TV suppliers have spent a lot of money getting their systems wired with coaxial cable in order to provide their TV customers with digital TV service. They are also providing customers with Internet access over the same cable. Some of the MSOs are beginning to look into the telephone customer base where they provide video, data, and now voice over the same cable and all at the same time. The National Cable and Telecommunications Association (NCTA) indicated that "MSOs had 16.8 million digital video subscribers and 9.2 million high-speed Internet customers as of June 30," according to their records. "But the industry only served 2.1 million cable telephone subscribers." More than half of the cable telephone customers, 1.2 million, are being served by the largest MSO, AT&T Broadband. There are more than a dozen companies currently offering this type of combined service to customers, and from all indications these customers are happy with the service they get, from one company. (*TR* 10/1/02)

FCC Appointment

President Bush's July 10 nomination of Jonathan Adelstein to fill the vacant seat on the FCC is still in the air. The problem seems to be a fight between the two parties in the Senate. As one reporter says, "Here is a virtually non-functioning Senate, like nothing I have seen in 45 years of covering Washington." Adelstein was an aide to Senate Majority Leader Daschle and "Jonathan's problem is he's tied to Tom Daschle. The best way Republicans have to strike at Daschle is through Jonathan." (*TR* 10/15/02) There are many more nominations for various judges and other offices that are waiting for confirmation vote in the Senate. November 5th may solve some of these problems.

Layoffs

Some of the ILECs are blaming regulatory obligations for some of their financial problems. One ILEC's top executive hinted that these problems could destroy some incumbent carriers. SBC Communications, Inc., blamed "outmoded regulations" for its decision to eliminate 11,000 positions and further reduce its capital spending budget. About 9,000 of the job cuts will take place in the fourth quarter, and the rest will occur in early 2003. SBC has lost nearly 3 million retail access lines this year which means that they have suffered a $1 billion drop in revenue year-over-year for the first half of 2002. SBC indicated that the unbundled network element rates are a big problem. These rates are set by the states and are below cost, in some cases by as much as 60 percent. Commenting on SBC's announcement, a spokeswoman from WorldCom said, "The last refuge of a competitive coward is to lay off workers and to blame it on regulation. SBC needs to learn how to compete instead of blaming its problems on procompetitive rules." (*TR* 10/1/02)

Public Utilities and Telecom Service

It was noted a few months ago that the Bristol, Virginia, electric utility was looking into providing telephone service in the community. While this was under consideration by the Fourth Circuit Court of Appeals, the Virginia legislature passed a law allowing localities to serve as telecom providers. The law was signed by the governor. Bristol is now waiting for a green light from the Corporation Counsel, before they start marketing telephone service. More than 600 customers have already placed their names on a list to sign up for telecom service as soon as it is available, and the list grows by 25 a day, says Jim Bowie, its general counsel. A representative of the American Public Power Association indicated that "more than 450 localities now operate a telecom network, and that number is growing rapidly." He also indicated that "most of the publicly operated telecom networks are in rural areas, and almost

DC Update

all are offshoots of electric utilities that have been operated by local or state governments for decades." (*TR* 10/1/02)

Cellular Coverage Information

In the early days of cellular telephone service the FCC made a rule that the cellular carrier had to provide detailed maps to customers showing the areas covered by the service the carrier provided. On September 24 the FCC issued an order eliminating this requirement. Customers should question the carrier about areas of service to be sure their needs are going to be met. (*TR* 10/1/02, *Telecom Manager's Voice Report (VR)* 10/7/02)

InterLATA - Interstate Long Distance

BellSouth now can provide long distance service in seven of the nine states in its service area. These are Alabama, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, and South Carolina. An application has been filed with the FCC for the other two states, Florida and Tennessee. The FCC has 90 days to act on the application so BellSouth may be the first carrier to have long distance service in all states served by the end of the year.

Verizon has been approved for 10 of the 13 states in its area: Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. The FCC is to rule on the application for Virginia by the end of October, and applications have not been filed for West Virginia, Maryland, and the District of Columbia.

Qwest had two filings with the FCC. One for four states and the other for five. Early in September they withdrew both of these applications and refiled for all nine states with the FCC on September 30. The nine include Colorado, Idaho, Iowa, Montana, Nebraska, North Dakota, Utah, Washington, and Wyoming. There are five more states in the area where applications have not been filed as yet: Arizona, Minnesota, New Mexico, Oregon, and South Dakota.

SBC has been approved for long distance in five of the 12 states in their area. They have filed an application for California and are in the process for Michigan. (*VR* 9/23/02,10/7/02)

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Board Report
October

The Board met on October 19 in Denver, Colorado, in conjunction with the Fall Seminars. Chairs of the permanent committees also participated in the meeting.

The Board conducted the biennial review of all ACUTA products and services, with input from the committee chairs and staff. In addition, the Board approved appointments to the Publications and Awards committees, and approved the theme and session tracks for the 2003 Annual Conference in Hollywood, Florida. The theme will be "Riding the Wave of Change," and the four tracks for breakout sessions will be:

(1) Leadership and Management

(2) Support and Services for the Campus Community

(3) Networks, Infrastructures, and Emerging Technologies

(4) Legislative/Regulatory and Related Topics.

The Board also held an in-depth discussion of the role of data communications professionals in ACUTA, and how the association can develop programs and services to meet their needs. Membership recruitment and retention goals in the Strategic Plan were also discussed and clarified.

Respectfully submitted,

John Bradley
Rensselaer Polytechnic Institute
ACUTA Secretary/Treasurer

Jeri Semer, CAE
ACUTA Executive Director

From ACUTA Headquarters

New ACUTA Web Site Benefits

Have you taken advantage of the many new features and benefits that have recently been added to the ACUTA Web site? If you haven't registered your unique user name, password, and "Web preferences" to create your customized "My ACUTA" page, you are missing out on information resources that will save you research time, simplify your life, and help you function more effectively on your campus.

In order to register your username and password, and start benefiting from the new features of ACUTA's Web site, go to http://www.acuta.org/myacuta and input your e-mail address. A personalized URL will be e-mailed to you to set up your ACUTA Web preferences. You will only need to go through the process one time, and your username and password will be valid as long as your institutional, company, or individual membership with ACUTA is current. There will no longer be a need to remember a new password each year.

Here are some of the new benefits available on the ACUTA site:

• By creating your "My ACUTA" page, you will be able to view password-protected sections of the Web site (such as the "Legislative & Regulatory Update" archive, listserve discussions, the resource library, and the institutional facilities and services database) without having to re-enter your password. The system will recognize your identity.

• Industry news feeds are now available that include telecom, technology policy, and communications equipment. These news highlights will help you stay current on technology news and save your valuable time.

• Content can be customized on the top page of the ACUTA web site, according to your preferences. Your personal start page can include some or all of the following:

   • Latest Telecom listserve discussions

   • Legislative and regulatory hot topics

   • Job postings

   • Industry headlines

• Members can view and request changes to their membership records. The primary member can also view and request changes to the records of other persons from their school or company. This will save time and help you keep your institution or company's membership records up-to-date at your convenience, while preserving the security of your records.

All of these changes are designed to let you customize news and information that will be relevant to you. In addition, the site's search capabilities are intended to provide a method of accessing the rich variety of information resources available through ACUTA—whether in the listserve archives, conference handouts, resource library, or newsletter articles—with a powerful search tool. Perhaps the most valuable aspect is that much of the information has been developed through the experience and expertise of fellow ACUTA members. And that, as you know, is the richest resource of all.

The ACUTA Web/Portal site is a work in progress, and we are working on additional features that are targeted to the needs of ACUTA members. Let me know what you think of the new features and benefits of the ACUTA site. Your feedback will be very helpful as we plan future enhancements. You can reach me at jsemer@acuta.org, or at (859)278-3338, ext. 225.

Welcome New Members

Associate Member ●

Institute for Advanced Study, Princeton, NJ
Edna Wigderson, 609/734-8120. T2 .... www.spsu.edu

Institutional Members ●

Kentucky Community and Technical College System, Lexington, KY
James P. Duvall, Sr., 502/418-4040. T1 .... www.kctcs.edu
Lutheran Theological Seminary at Philadelphia, Philadelphia, PA
Kyle Barger, 215/248-6325. T1 .... www.ltsp.edu
Southwest Tennessee Community College, Memphis, TN
Micahel T. Old, 901/333-4777. T4 .... www.southwest.tn.edu

Corporate Affiliate Members ●

COPPER MEMBERS

Draka Comteq, Franklin, MA

Jeff Mahall, 508/541-2268 .... www.drakacomteq.com

Draka Comteq offers fully integrated fiber optic and copper cabling solutions. Cable construc-
tions include coaxial, twisted pair, multi-fiber, singlemode or multimode, hybrid or composite,
for backbone and horizontal installations for voice, data, and video transmissions.

Dux Public Relations, Richardson, TX

Kevin Tanzillo, 972/889-9577 .... www.duxpr.com

Dux Public Relations specializes in technology, business-to-business, and consumer public
relations and marketing. From strategic planning through tactical delivery, Dux maximizes
visibility and marketplace recognition for companies seeking to increase sales and market
share.

Fiber Solutions, Inc., Homewood, IL

Glenn Spoolstra, 708/206-1565 .... www.fsifiber.com

Inner Wireless, Richardson, TX

Annette Gieseman, 972/201-2538 .... www.innerwireless.net
Inner Wireless is an in-building wireless technology systems and services company. Its
InnerMobile™ system converges wireless voice and data onto a broadband in-building infra-
structure that simultaneously provides coverage for multiple carriers and services including
PCS, cellular, SMR/LMR, and WLAN.

System Engineering International, Frederick, MD

Martin Grolnic, 301/694-9601 .... www.seipower.com
SEI is the foremost provider of uninterruptible power for ISDN and VoIP phonesets and terminals
for both Centrex and PBX enterprise installations.

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ACUTA EVENTS

Winter Seminars	Spring Seminars	32nd Annual Conference & Exhibition	Fall Seminars
January 12-15, 2003	April 27-30, 2003	July 27-31, 2003	Oct. 19-22, 2003
Tempe, AZ	Norfolk, VA	Hollywood, Florida	San Diego, CA
Wyndham Buttes Resort	Sheraton Norfolk Waterside	Westin Diplomat Resort & Spa	HIlton San Diego Resort