# ACN Report

*Published Exclusively for Members of the Alerting and Coordination Network*

Fall 2003 Vol. II, No. 3


## ACN: From Analog Lines to Digital Connections

The Alerting and Coordination Network (ACN) was created as a secure, survivable, direct connection between telecommunications providers and the Government to maintain communications in times of natural and man-made disasters. Established just twenty years ago, the ACN has undergone many changes in the last few years, both operationally and technically.

In 1982, as part of the Department of Justice's Modification of Final Judgment concerning the divestiture of AT&T, the Regional Bell Operating Companies were instructed to implement a private line network to meet communications requirements during a national disaster. Created by Bellcore (formerly Bell Labs) and financed by the participating telecommunications companies, the ACN was initially operated and maintained by the National Telecommunications Alliance (NTA). The network was designed with private telephone lines and tie lines to users' PBXs; each voice line occupied a mere 3 kHz of spectrum and transmissions were conducted in analog. Bypassing the public switched network (PSN), ACN offered a reliable mechanism for the Government and telecommunications emergency operations centers to continue communications when the PSN was congested or disrupted.

*continued on page 2*

## In this issue...



## DHS, NCS Funded in FY 2004

The National Communication System (NCS), home of ACN and now part of the Department of Homeland Security (DHS), has been appropriated $141 million for fiscal year 2004. This appropriation was part of the $37.4 billion appropriations bill recently signed into law for DHS, and includes funding for ACN.

On October 1, 2003, in a ceremony held at DHS, President Bush signed the first DHS appropriations bill, granting DHS budget authority for FY 04. $31.3 billion has been slated for discretionary funding provided by Congress, with an additional $6.1 billion in mandatory spending, mostly funded from fees. Other allocations within critical infrastructure protection include risk assessments and vulnerability evaluations, as well as the expected funding

*continued on page 3*


701 S. Courthouse Road, Arlington, VA 22204
Tel: 703-607-4963
http://www.ncs.gov/acn.htm

NTA ceased operations in December 2000 and the Office of the Manager, National Communications Systems, assumed operational support of the ACN. Effective January 2001, ACN became a Government-funded network.

Also in 2001, the Government decided that changes were necessary to keep up with current technology and to increase security and survivability. The network is now a cutting edge, Voice over Internet Protocol (VoIP) network. Each user now has access to full T-1 (1.544 kbps) connectivity, providing end users with faster and more efficient communication. Each ACN site has a VoIP phone with multiple features, including upgraded voice mail service, large phone display, active directory function, and speed dial. All VoIP packets receive a Class of Service 1, guaranteeing priority of voice over data in packet delivery. As a result, ACN offers toll-quality voice capabilities within a significantly more powerful, robust and resilient private network. Instead of "physical" lines connecting each partner on the network, the connections are through an enhanced virtual private network (EVPN).

Today, the ACN continues to operate under the auspices of the National Communications System, which now resides in the Department of Homeland Security. There are 32 ACN sites connecting Government and telecommunications industry partners that working together to protect our Nation's communications infrastructure.

# Phone Feature: *Call Log Application*

There are three Call Logs available on the 4620 IP Telephone. Any calls made to or from the phone are added to the Outgoing, Incoming, or Missed call logs. These logs are helpful in tracking who called, for redialing, or for obtaining numbers from previous calls. Call logs display the following information:

- Name of party
- Phone number of party
- Time of call
- Date of call
- Type of call (outgoing, incoming, or missed)
- Duration of call

To access the call logs, press the Log softkey, then choose one of the following:

- Outgo (outgoing)
- InAns (incoming)
- Missed (missed)

To view more detailed information about a call, press the Line/Feature button to the left or right of the call entry.

# Engineer's Corner: *ACN Encrypted*

In September, the ACN engineers upgraded the software for the ACN PBXs in Arlington and Culpeper. As a result, the network now enjoys better security, including encryption between users during a conversation. The new software provides 128-bit point-to-point encryption. Digitally encrypting the voice portion of a Voice over Internet Protocol (VoIP) call reduces the risk of electronic eavesdropping. For example, unauthorized IP packet monitors, sometimes called sniffers, attempt to "listen in" to VoIP calls, much like wiretaps on a circuit-switched call. IP packet monitors gain extra advantage, however, in that an IP packet monitor can watch for and capture unencrypted IP packets and can play back the conversation in real-time or store it for later playback.

The new software encrypts the IP packets before they enter the ACN network. An encrypted conversation sounds like white noise or static when played through an unauthorized IP monitor. ACN users will not know the call is encrypted because there are no visual or audible indicators to reveal that the call is encrypted, and there is no appreciable voice quality difference between encrypted and non-encrypted calls.

# Network Maintenance: Behind the Scenes

Though ACN users rarely witness it, ACN engineers are constantly working to maintain and enhance the network, keeping up with the changing technology through software, firmware, and hardware upgrades so that the network is readily available in times of need.

In addition to daily maintenance and periodic updates to the system, the engineers perform complete tests of all network systems from users' phones to the PBXs and switches. End users are only affected by the monthly test calls, performed to ensure that the user's phone sets are operational and that the voice quality is good.

It is important for users to answer these test calls. Phone and network tests are usually conducted on the third Monday of each month, and all test results are reported to NCS.

ACN users may have noticed a short network outage in early September. Unfortunately, as with any technology, there is a chance that outages can occur. Though the network equipment was operational, the network carrier experienced a disruption of service for little over an hour. However, this outage provided an excellent opportunity: when ACN engineers investigated the interruption, they found that they could make a few enhancements to the network and proceeded to update the software and firmware of the system to prevent future outages as well as problems with phones timing out due to those outages.

In any event, such outages are rare. ACN operations continued without failure, for example, during the August power outage that afflicted the Northeastern and Midwestern United States, as well as during Hurricane/Tropical Storm Isabel as it swept through the Mid-Atlantic in September.

To improve network resiliency and security, in September, ACN engineers upgraded the software that operates the ACN communications infrastructure, including the PBXs and Ethernet switches (see Engineer's Corner).

ACN end users can be confident that the ACN engineers are constantly working to maintain and enhance the Alerting and Coordination Network, ensuring a continuing standard of excellence for the future.

Funding *continued from page 1*

for emergency preparedness and other technology-related security funding.

The FY 04 appropriation affirms the criticality of NCS and ACN in fulfilling the DHS mandate to protect the Nation from threats to the homeland.

## NCS in the IAIP

The NCS, which operates ACN, resides structurally under the "Information Analysis and Infrastructure Protection" (IAIP) directorate of DHS. IAIP is led by Mr. Frank Libutti, Under Secretary for IAIP, and Mr. Robert P. Liscouski, Assistant Secretary for Infrastructure Protection.

Frank Libutti was confirmed by unanimous Senate vote in June 2003 as Under Secretary for IAIP. Prior to his confirmation as Under Secretary, Libutti served as the New York City Police Department's (NYPD) Deputy Commissioner of Counter-Terrorism. His mission was to plan and direct NYPD's efforts in preventing, responding to, and investigating acts of terrorism in the City of New York.

Mr. Liscouski is the Assistant Secretary of Homeland Security for Infrastructure Protection, having assumed the post in March 2003. He is responsible for the Department's efforts to identify critical infrastructures and propose protective measures to keep them safe from terrorist attacks. Prior to returning to Government service, he was the Director of Information Assurance for the Coca-Cola Company, responsible for the development and guidance of corporate information security strategies and for conducting research on new business technology vulnerabilities and risk mitigation strategies. Mr. Liscouski's prior Government experience includes 11 years with the Diplomatic Security Service of the US Department of State.

# Meet Ron Thomas, Program Manager, ACN

Ron Thomas is the Program Manager for the ACN, and has been its leader since 2000. He came to NCS from the Defense Information Systems Agency (DISA), where he was a Telecom Specialist for six years. Three years ago, he moved to NCS to become part of the Operations Group. His mission was to take over ACN, which was then transitioning from an industry-funded network to one operated and maintained by the Government (see article on ACN, page 1). In addition, he is also the Program Manager for the Shared Resources High Frequency (SHARES-HF) network, responsible for the daily operations of both ACN and SHARES.

Ron came to ACN with more than thirty years experience in communications, including circuit conditioning, provisioning, maintenance, and installation. He began his telecom career in the US Army in 1963, where he learned to fix and tune radios and transmitters. "Those were the days," he recently noted, "when transmitters were so large you walked into them to maintain and repair them." During his Army career, he traveled the world, working in such hot spots as South East Asia and the Middle East.

At DISA, he was the Provisioning Team Leader and Telecom Specialist, responsible for managing telecom service requests for the Department of Defense customer, including planning network requirements and managing customers and vendors alike.

Having been a long time participant in the telecom world, he understands the convergence between communications and information technology, and is quick to appreciate the new capabilities such convergence offers. "The ACN transition from analog to Voice over Internet Protocol (VoIP), which we have successfully managed in the last two years," he commented, "is an excellent example of the exciting opportunities afforded by new technologies. The new capabilities of ACN provide a great deal of flexibility to our users. We are well prepared for the digital age!"

# Did You Know?

Alexander Graham Bell invented the telephone from his laboratory at 5 Exeter Place, Boston, Massachusetts. His lab contained several rooms, one being the room from which the first phone call was transmitted from Bell to his assistant, Tom Watson. One of the laboratory rooms had a picture of an owl on the wall which was painted by Mabel Hubbard, Bell's fiancée, in jest at his habit of working late.

## Points of Contact

ACN Program Manager, Ron Thomas:
- ACN Ext: 4106
- Tel: 703-607-4963
- Fax: 703-607-4998
- E-mail: thomas5r@ncs.gov

General Information: acn@ncs.gov

Technical Support, Service Management Center (SMC):
- ACN Ext: 4357 (HELP)
- 877-441-9330
- E-mail: smc@ags-inc.us

**24/7 Help Desk**
**877-441-9330**

**ACN ON NET**
**Ext. 4357 (HELP)**

## 2003 Test Schedule Dates & Times

**10am - 2pm EST**

The monthly ACN test will now occur on the third Monday of each month.

701 S. Courthouse Road, Arlington, VA 22204
Tel: 703-607-4963
http://www.ncs.gov/acn.htm