Case Study

Arlington County:
Providing IP-Based Videoconferencing Services to an Entire County

VCON
VISUAL COMMUNICATIONS

Introduction

Arlington County, Virginia is located directly across the Potomac River from Washington D.C. Being at the center of the Washington D.C. metropolitan area, Arlington County serves as a base for many tourists visiting the area. Within Arlington County are many federal government facilities including The Pentagon, Arlington National Cemetery, Fort Myer (U.S. Army), Henderson Hall (U.S. Marine Corp), The Iwo Jima Memorial, The Defense Communications Agency, The National Science Foundation, The Federal Deposit Insurance Corporation and The State Department Foreign Service Institute. Also located in Arlington County is Washington National Airport. The Airport is the eighth busiest airport in the Nation, handling 16 million passengers a year.

Arlington County's combined resident and commuter population numbers nearly 250,000. The county government itself employs approximately 3,500 people in order to staff and manage the many services the population requires.

Arlington County's administrative functions are provided through 27 agencies and departments. One of these, the Department of

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CASE STUDY QUICK FACTS

MXM Size: 100-user license

Number of Desktop Endpoints: 20 VCON ViGOs, 10 vPoint client seats

Number of Group Endpoints: 4 VCON MediaConnects, 4 Falcons

Number of non-VCON Endpoints: 1 Tandberg

MCUs Deployed: 60-port Cisco 3540 with Gateway card, 8-port VCON Conference Bridge (VCB)

Most Valuable MXM Features:

- Remote management and configuration of endpoints and MCUs

- User directory

- Bandwidth management capabilities

- Ad-hoc conferencing

Technology Services (DTS) provides all telephone, computing and information technology to the county's employees at 42 sites in the county. DTS takes care of everything from basic services, such as telephones to every office and Internet access to libraries, to redundant networks for business continuity and disaster recovery. This department is also the home of the Arlington County's e-Government initiative.

The Institutional Network (INET) is a key element of Arlington County's e-Government strategy. DTS operates INET as a self-supporting service. Departments are charged usage fees for services and pay for hardware and software provided by INET. The fire department and police departments in turn receive grants from the federal government for emergency preparedness. These departments choose how they spend their resources and can elect to use a non-government provider, however, the INET service and product portfolio is complete, secure and very competitively priced.

Deployed in 42 sites in its first phase in 2002, the Cisco Gigabit-capacity converged, regional network offers rich informational, educational, and communications services to county staff, increases public access to local government,

Picture Perfect Conditions

Prior to the current INET video deployment project, Arlington County did not have videoconferencing systems in place. INET resources were initially invested in establishing voice over IP and support for e-mail and Web services to user desks and handheld portable devices.

Videoconferencing over IP is a new INET-based service introduced in early 2002 as a pilot deployment to select Arlington County employees. INET's low latency, high capacity characteristics are ideal for videoconferencing and videoconferencing is a natural complement to existing INET applications.

Chuck Hilliard, DTS' video analyst, is responsible for all aspects of INET's videoconferencing deployment and its management. "Our goal with videoconferencing is to permit those who would otherwise have to drive between facilities in the county to meet one another and do their business; to replace the travel with equally engaging virtual meetings," Hilliard says.

In February 2002, Hilliard selected VCON as INET's sole supplier of desktop videoconferencing because the ViGO desktop

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and at the same time eliminates the recurring cost of leased lines between locations. By having 12 strands of fiber to all facilities, INET is redundant, scalable and flexible. It offers the DTS the ability to set up new services throughout the county with little to no delay.

product met Hilliard's quality standards. He found the user application easy to use and all the VCON products are priced competitively. Finally, Hilliard says that he was impressed with the consultative approach to his business by the VCON representative, Jim Hallihan.

"Jim stepped in and asked what we needed to do and proactively worked to help us achieve our goals, not just meeting the vendor's financial objectives," recalls Hilliard.
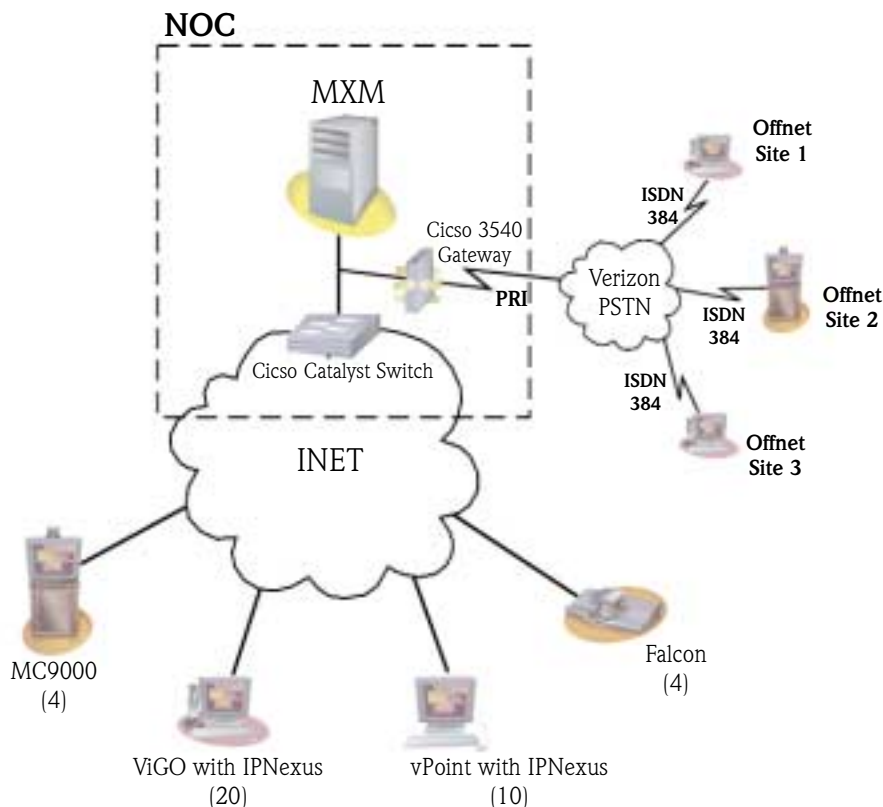
A Pilot is in Place

Post September 11, Arlington County realized that there was a serious communication problem preventing it from responding appropriately in time of an emergency. Steps were taken to conduct a public safety pilot project. County response teams, including the public health, fire and police departments decided they would simulate an anthrax outbreak on Arlington County and in the process demonstrate the value of INET and technologies such as videoconferencing over IP as part of the smooth and effective management of a local crisis.

Purchasing was under way by April and the

pilot videoconferencing project to demonstrate safety preparedness began to reach initial sites in May 2002. In advance of videoconferencing, each target facility is provisioned on INET with a 12 strands of fiber, and a 4006 Cisco Catalyst switch for edge connectivity. Cisco 7206 VXR provide the Internet connectivity and PIX redundant firewalls secure all communications. Fire chiefs and battalion captains participating in the pilot received Dell OptiPlex 1.6 GHz multimedia computers. These are multi-purpose resources capable of hosting the ViGO application software and hardware. In addition, there are other computers in every firehouse.

In the pilot implementation, a 100-seat VCON MXM and VCON end points were installed for the distributed members of the public safety community assigned to the Office of Emergency Operations Management. There

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Arlington Country IP Video Network Diagram

NOC

MXM

Cicso 3540 Gateway

PRI

Cicso Catalyst Switch

INET

Verizon PSTN

ISDN 384 — Offnet Site 1

ISDN 384 — Offnet Site 2

ISDN 384 — Offnet Site 3

MC9000 (4)

ViGO with IPNexus (20)

vPoint with IPNexus (10)

Falcon (4)

were 10 fire stations and 2 battalion captains, the police captains, the county manager, the director of Public Works, the director of the Department of Health Services, and the CTO and CIO of the Department of Technology Services. In case of an emergency, such as that simulated in the pilot, these employees must report to the Emergency Operations Center in person or via videoconferencing.

Hilliard's deployment process began with a face-to-face meeting with the person or people at a location where videoconferencing was being introduced. He discussed the communications needs and how videoconferencing could replace some of the telephone calls and face-to-face meetings. He also assessed the physical plant to identify the best location for the users and described the implementation strategy to set appropriate expectations.

In a follow up visit to each facility, Hilliard installs the vPoint software and ViGO camera, or the MediaConnect 9000 (MC9000), then performs basic training on the technology. The installations take about 20 minutes per site.

Expansion of videoconferencing services
With the pilot installation for the Office of Emergency Operations Management barely complete, Hilliard is already receiving requests for services for other departments.

Arlington County will use videoconferencing to facilitate communications about the management of water treatment facilities and road management and maintenance. In the Department of Public Works, the director of operations and staff are housed in a facility approximately 5 miles from the office of the director of the department. In bad weather conditions, or in the case of an emergency, the staff and director can now use videoconferencing to communicate. A VCON MC9000 is available in each conference room and a ViGO is in each office for virtual meetings.

"Eventually, videoconferencing will be used county-wide for all kinds of applications," promises Hilliard. The Department of Technology Services itself, can use videoconferencing and data conferencing for remote technical support. In a future project, Hilliard plans to offer more focused learning programs delivered by videoconferencing, especially Security Awareness training. The Department of Health Services also has a variety of training needs. Health Services also anticipates coordinating department-wide meetings with videoconferencing and, in times of emergency, performing virtual triage with remote facilities. There are also other systems being rolled out to support communications between Arlington County office and federal agencies such as Center for Disease Control and law enforcement agencies such as FBI and DEA. Remote arraignments will lower the need for those charged with crimes to be physically transported to court rooms. Libraries in the county will also be equipped with videoconferencing for public access to Government agencies, their services and personnel.

Arlington County purchased a 100-user license on the MXM for its first phase. Hilliard is confident that the INET deployment will rapidly reach that size. For multipoint meetings, the network has a 60-port Cisco 3540 multipoint conferencing unit with a gateway card and an 8-port VCON Conferencing Bridge. These are centrally located in the network operations center.

MXM Benefits

The MXM is key to the expansion of videoconferencing services on INET.

When units are installed they are configured to register with Arlington County's MXM gatekeeper in the network operations center. "In order for me to really push this consistently to many different people, with many levels of comfort and competency with technology, I must have the ability to remotely configure and manage everything from the desktop and group end points to the multipoint conferencing units and gateway ports without moving from my desk," says Hilliard. Using MXM's maximum bandwidth administration interface, Hilliard is sure that desktops never exceed 512kbps and group systems never exceed 768kbps bandwidth usage per call.

Enabling Government in Ways Unimagined

Vivek Kundra, Director of Infrastructure Technologies at DTS, Arlington, says that with the support of people like Hilliard, his organization provides the best technical services to all county employees and eventually to the benefit of the residents and people who come to Arlington County to work.

Arlington County is ahead of other local, state and many federal government agencies in implementing a broadband network between its departments and agency users.

Videoconferencing is an important service on the network because it promises to accelerate many processes that today have people meeting face-to-face, despite traffic and poor weather conditions on the roadways. It also

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In addition to administration and management, Hilliard uses the MXM's on-line directory. As sites are added to the network, the name of the location or user is added to the user directory. When calling from one location to another, users simply click on the site or person's name and the videoconference between the two locations is established.

Hilliard already uses the MXM event log for occasional troubleshooting but in the future plans to create reports for Departments to learn their videoconferencing usage patterns and to analyze traffic for reports to the County manager. "Down the road, we expect to use the MXM's ability to create billing reports especially for those departments that use our gateway to a PRI for off-net calls," says Hilliard.

will help the county to be more responsive to the needs of its citizens and visitors in times of emergency as well as peace and prosperity. Working with VCON as its partner on the INET videoconferencing project, Hilliard and Arlington County's Department of Technology Services are making good on a promise to all those living and working in Arlington County and setting an example for other government IT managers who have embraced the vision of eGovernment.

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