

# Video Teleconferencing Solutions: Consolidated Forensic Laboratory

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## State-of-the-Art Video Teleconferencing at the CFL

The Consolidated Forensic Laboratory (CFL) brings the city's public safety forensic science and public health efforts into a single world-class, state-of-the-art facility.

In support of this, the DC-Net video conferencing solution at the CFL gives forensic scientists, medical examiners, and police at the site the ability to communicate using state-of-the-art video teleconferencing tools not just within the building but with scientists, doctors, and public safety experts across the network and throughout the world as well.

Completed in 2012, DC-Net designed and oversaw implementation of high definition (HD) video conference, training, and multi-purpose room solutions that support multi-party conferencing, PC presentation, and fully integrated audio and video. Highlights include:

- HD 1080 pixel (1920 x 1080 pixel) PC presentation of digital and analog sources from multiple sources
- HD 1080 pixel video teleconferencing with positioned 12x Pan Tilt Zoom (PTZ) HD cameras
- Integrated voice over IP (VoIP) conference phones; audio-only calls can utilize the conferencing codec for simplified call and directory management
- All digital HD video matrix distribution system, providing independent routing of a video source to any room display
- Integrated user control system with wireless 5.7" touch panels and in-wall docking stations and wireless remotes

With HD video extends the medical examiner’s ability to teach through the operating theater and training sessions to medical students and doctors not just at the facility but at other locations—such as teaching hospitals—as well. Similarly, forensic evidence may be examined and shared in real time with remote experts around the country.

Just as the CFL plays a vital role in advancing and improving public safety support, homeland security, crime investigation capabilities, and public health and science in the District, state-of-the-art video conferencing at the site is a critical tool for advancing the District’s public safety communications.

### Multi-Purpose Room

The Multi-purpose room can serve as one large auditorium or partitioned into two separate rooms. It has four 42” monitors in the larger room along with another monitor, projector, and a large-scale 133” electric projection screen in the fore room. In addition to live video, multiple PC inputs are supported on the projection screen and on all monitors. The system features a two zone audio system that can be integrated across both rooms or operated separately. Wireless touch panels enable control for operating presentations and audio/video conferences for each room individually when the partition is closed or for the entire space when the partition is open.



Figure 1: Multi-purpose room, from the rear, looking toward the podium and main projection screen

### Training Room

The Training room is configured for HD audio/video conferencing and PC presentation. It can display PC images from two PC input plates located on the front wall and in-floor box located toward the center of the room. Video displays on the front and back wall accommodate both the seating positions of the audience and presenter. The front wall includes a 92” electric projection screen with 1080 pixel ceiling-mounted projector, while the back includes a 60” 1080 pixel LED monitor. The system includes a wireless touch panel controller for operating presentations and audio/video conferences.

## Conference Rooms

Configured for audio/ video conferencing and PC presentation, these six-person conference rooms display PC images from two PC input plates located on the front and side walls and an in-floor box. The rooms each have a 70" 1080 pixel LED monitor for large-format display of presentations and video conference calls, and include a wireless touch panel controller for operating presentations and audio/ video conferences. The monitor and conferencing camera is housed in a laminate shadowbox that resembles the cabinetry finish.

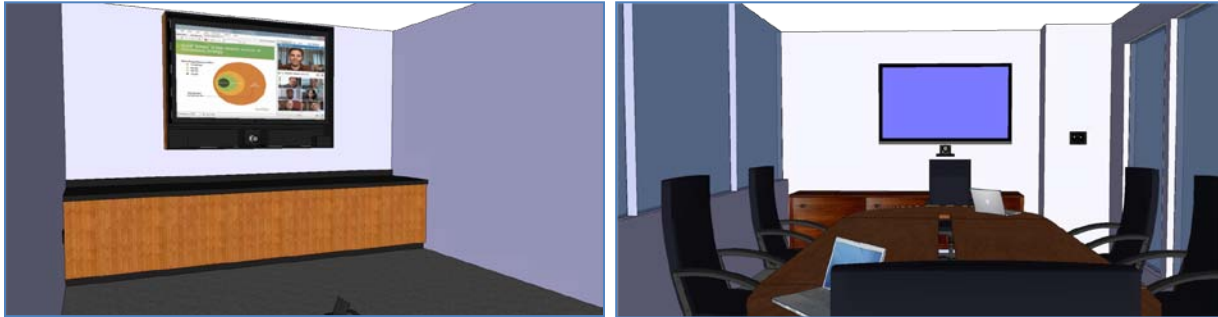
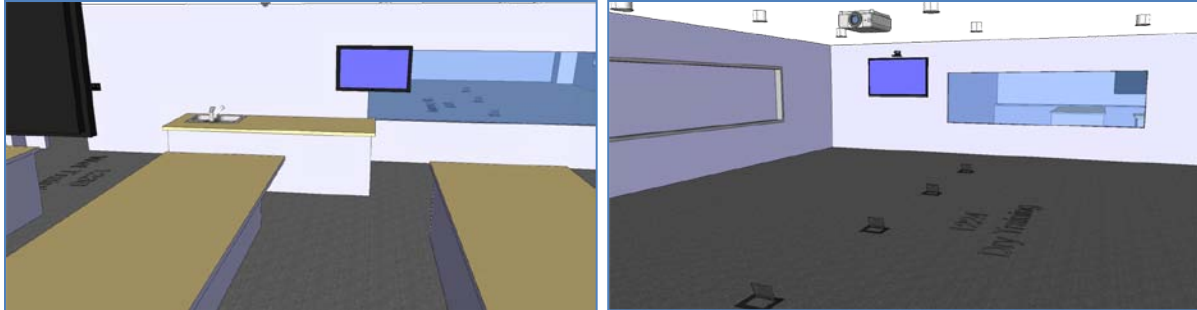


Figure 2: Conference Room Views

## Wet and Dry Training Rooms

These adjoining training rooms (visually connected through an interior window) are configured for audio/ video conferencing and PC presentation. Each room has two 1080 pixel 12x PTZ cameras installed with the video conferencing codec, one for the presenter and one for the audience. A wireless touch panel controller is used for operating presentations and audio/video conferences.

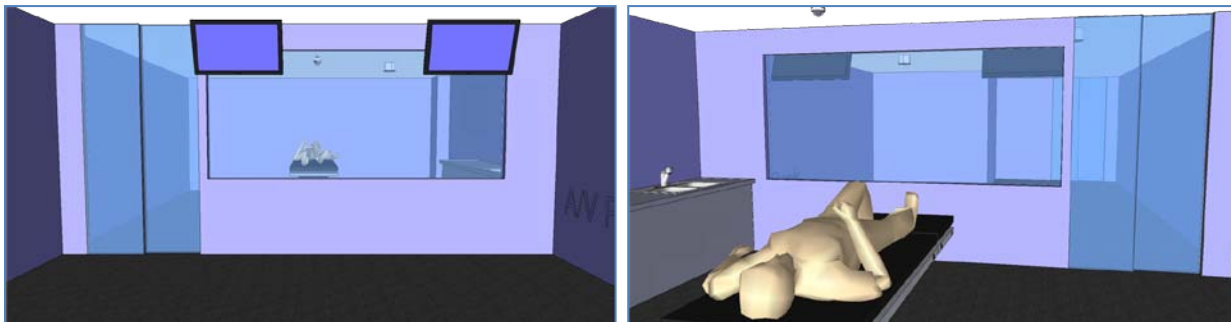
- The wet training room (with a sink) includes workstation demonstration. The presenter's workstation features a ceiling-mounted PTZ document camera with 10x zoom for magnified demonstration of the work space. The room has two 60" 1080 pixel LED monitors for large-format display of presentations, demonstrations, and video conference calls.
- The dry training room has a 133" electric screen/HD video projector for the audience and a presenter's 70" 1080 pixel LED confidence monitor.



**Figure 3: Wet (left) and Dry (right) Training Room Views**

### Operating Theater

The Operating Theater, which consists of two divided rooms with a windowed partition, allows participants in the ante room to view camera images in the operating room and to listen during instructional sessions. Two-way communication between the participants in the ante room and instructors in the operating room is conducted via ceiling-mounted microphones and speakers. Video from the two operating room cameras is rendered on a pair of 42" ceiling-mounted displays in the ante room. Control of the two PTZ operating room cameras is done via wireless remote.



**Figure 4: View from Ante Room (left) and Operating Room (right)**

### Large Conference Rooms

The large (20-person) sixth and third floor conference rooms are configured for audio/ video conferencing and PC presentation. The rooms can display PC images from the floor-mounted PC input plate and side-wall input plate. The rooms have 133" electric screen/1080 pixel HD projectors for large-format display of presentations and video conference calls. Systems include wireless touch panel controllers with in-wall docking stations for operating presentations and audio/ video conferences.

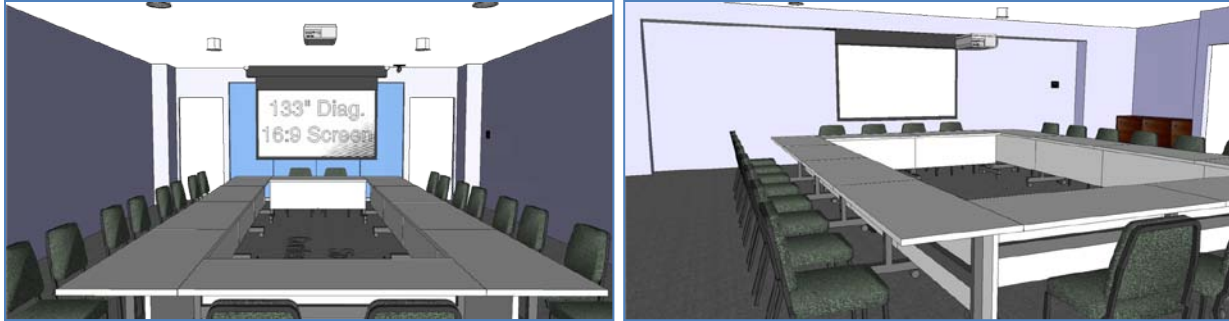


Figure 5: Sixth Floor (left) and Third Floor (right) Conference Rooms

## Video: One Part of a Comprehensive Network Solution

Video is a key component of the DC-Net converged network solution but it is not the only piece. Ultra high bandwidth connectivity to the CFL on the DC-Net network with SLA guaranteed 99.999% uptime is the underlying platform for all telecommunications services at the site. Key features include:

- 10 Gigabits per second (Gbps) building backbone
- 1 Gbps Ethernet to each end user desktop
- 1 Gbps network connection to District data centers and the Office of Unified Communications at the Unified Communications Center
- Fully integrated Cisco Systems enterprise architecture with easy to upgrade electronic switches
- Centralized power management using Power over Ethernet (PoE) switch ports capable of supporting power per port for wireless access points and Cisco VoIP phones
- Redundant processors in core switching equipment and dual fiber uplinks to the Main Distribution Facility in the building and the Wide Area Network
- Virtual LAN capability for segmenting user data traffic, video conferencing, wireless, and voice
- Backup DC Power
- 400 voice over IP phones
- Lightweight wireless access points—installed indoors and managed by DC-Net—provide dual 2.4 and 5.0 GHz radios and 802.11-a, g, n compliant access, offering secure government user and guest access.

## About DC-Net Video Conferencing Solutions

DC-Net's Video Teleconferencing (VTC) service provides District government agencies with the enterprise-wide delivery of high definition video conferencing and voice communication over an IP infrastructure. The system uses a standards-based state-of-the-art Cisco/Tandberg infrastructure, enabling interoperability between Session Initiation Protocol (SIP)-and H.323-compliant endpoints and interworking with third-party endpoints from inside and outside the network.

VTC helps agencies communicate more cost-effectively and efficiently with other agencies, the public, vendors, and internally.

Key benefits include:

- Efficiency in business operations—cost savings and cost avoidance for all users, whether in office or mobile
- Greater responsiveness to constituents—public interaction with government and via government
- Useful tool for training and education—employee and public training
- Emergency readiness and response

VTC service features include:

- Unlimited, point-to-point video conferencing included in basic service price
- High definition (HD) and Standard definition (SD) monthly subscription multi-port bridging – enabling large meetings and training sessions
- HD or SD pay-per-use multi-port bridging service – enabling one-time meetings and events
- Scheduling support for all bridging services
- Video conference recording and sharing – a secure environment for storing and sharing recording
- Full 24/7 technical support for Cisco/Tandberg endpoint types installed by DC-Net or approved integration vendors

## Ordering VTC Services

District agencies can order VTC services through RTS. For more information about video conferencing products and services, contact the DC-Net Business Unit at [dcnetbu@dc.gov](mailto:dcnetbu@dc.gov) or see our intranet site at: [www.dcnet.in.dc.gov](http://www.dcnet.in.dc.gov)