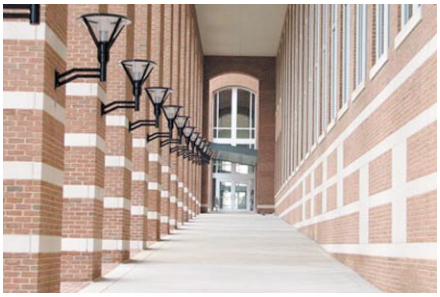
Courtroom 5E The Fairfax Courts' High-Technology Courtroom

The decision of the Fairfax County Courts to create a high-technology courtroom moves Fairfax into the main stream of the nation's innovative courts. The recently completed courtroom prototype project will enable the Fairfax Courts to hear even the most serious and complex cases more accurately, efficiently, and quickly than can be done at present and will make Fairfax an international leader in the use of courtroom technology.

– Professor Fredric I. Lederer, College of William and Mary Marshall-Wythe School of Law.



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1 Section One — Courtroom Technology Background

Courtroom Dedication

Flat screen displays allow the judge, jury and gallery to view unobstructed presentations of evidence.

1-1 INTRODUCTION

During 2006, the Fairfax Courts completed a high-tech "prototype" courtroom to be piloted during courtroom trials and proceedings. The prototype serves as a blueprint to determine the technology needs of the expanded courthouse scheduled for completion during 2008. The expansion includes the construction of 17 new courtrooms in addition to renovations to existing courtrooms in the Fairfax County Courthouse. The objective of the prototype project was to explore ways to improve citizens access, internally and externally, to the Courts, facilitate trials and hearings in the most effective and efficient means possible, and allow all three Courts to share common resources. In addition, the design incorporates the flexibility and adaptability needed to adjust to future changes in technology and court proceedings.

The prototype was based on a technology master plan prepared through an independent consultant study in fiscal year 2001 on behalf of Fairfax County and the Fairfax County Judicial Center complex. The Circuit Court designated Courtroom 5E as the "prototype" courtroom to pilot and test new technologies to include:

- *Integrated and electronic evidence presentation;*
- *Real-time court reporting;*
- *Wireless access;*
- *Electronic docket display and wayfinding;*
- *Video conferencing, video arraignment;*
- *Remote witness, secluded witness;*
- *Integrated assistive listening and interpretive systems, and*
- *Judges' control of the technologies from the bench.*

Flat screen displays allow the judge, jury and gallery to view unobstructed presentations of evidence. Specialized access floors and customized courtroom furniture/fixtures were designed to accommodate the evolution of technology during the litigation process. The Courtroom Technology Prototype project advances the recommendations provided in the original master plan, with assistance from the Center for Legal and Court Technology and further refines the technologies necessary for new and existing courtrooms.

Since implementing the high-tech courtroom, several trials have been completed using the high-tech prototype courtroom. Highlighted cases include the following:

- ✔ *Using evidence presentation capabilities, attorneys in a medical malpractice case were able to display digital 3D medical graphics and images.*
- ✔ *Use of video-conferencing technology to allow a ten-year old "protected witness" in a child abuse case to testify from a remote area of the courthouse in lieu of having to be in the same room with the accused.*
- ✔ *Due to the inability to obtain a visa to return to the United States, the remote testimony technology allowed the plaintiff in a chancery case to provide testimony from Izmir, Turkey.*
- ✔ *Due to scheduling and transportations issues, the defendant in a civil case was able to provide testimony from Cairo, Egypt.*

These cases highlight the success of the prototype project and represent a major breakthrough for the adjudication process in Fairfax County and the Commonwealth of Virginia. Other Courts throughout the Commonwealth, USA and other countries across the globe, including the U.S. Army's military Courts have approached Fairfax County to research and emulate the successes achieved by the Fairfax Courts.

Additional requests continue to be received from judges and attorneys to utilize the technologies and expand the capabilities to other courtrooms.

1-2 JUDICIAL, LEGISLATIVE AND EXECUTIVE MANAGEMENT

The decision to research, implement and support advanced technology in the courtroom, including the Courtroom 5E prototype project, was a joint effort between the judicial, legislative and executive branches of government in Fairfax County as represented below.

JUDICIAL — FAIRFAX COUNTY COURTS

Circuit Court —
Chief Judge and Technical Judge, *Dennis J. Smith*

General District Court —
Chief Judge, *Donald P. McDonough*

General District Court —
Technical Judge, *Michael J. Cassidy*

Juvenile Court — Chief Judge, *Teena D. Grodner*

Juvenile Court — Technical Judge, *David S. Schell*

Clerk of the Circuit Court — *John T. Frey*

Clerk, General District Court — *Nancy Lake*

Clerk, Juvenile Court — *Jennifer Flanagan*

Director, Juvenile Court Services — *James S. Dedes*

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Deputy County Executive, *Robert A. Stalzer*

Department of Management and Budget,
Susan Datta, Director

Department of Information Technology,
Wanda Gibson, Director

1-3 Courtroom Technology Team

In 2004, a Courtroom Technology Team was organized to research, share, educate, design and implement the high-tech "prototype" courtroom. The Courtroom Technology team consist of business and technical representatives from the three Fairfax County Courts; Circuit Court, General District Court, Juvenile and Domestic Relations District Court and is a cooperative effort of the three Fairfax Courts, Office of the Sheriff, Department of Management and Budget (DMB), Department of Cable, Communications and Consumer Protection (DCCCP), Department of Information Technology (DIT), Department of Public Works and Environmental Services (DPWES), Department of Purchasing and Supply Management and the Department of Facilities Management (FMD). Consulting services were also provided by the Center for Legal and Court Technology (Courtroom 21 Project).

KEY MEMBERS OF THE COURTROOM TECHNOLOGY TEAM INCLUDE:

Courtroom Technology Office —
David Bartee, John Lumsden

Circuit Court — *Andrew Kassick, Barbara Kenney*

General District Court — *Afsaneh Tibbs, Celine Robinson*

Juvenile Court — *Letha Braesch, George Spack, Ann Todd*

Office of the Sheriff — *Buck Watkins, George Wright*

Dept of Cable, Consumer Protection & Communications
— *Gary Quinn*

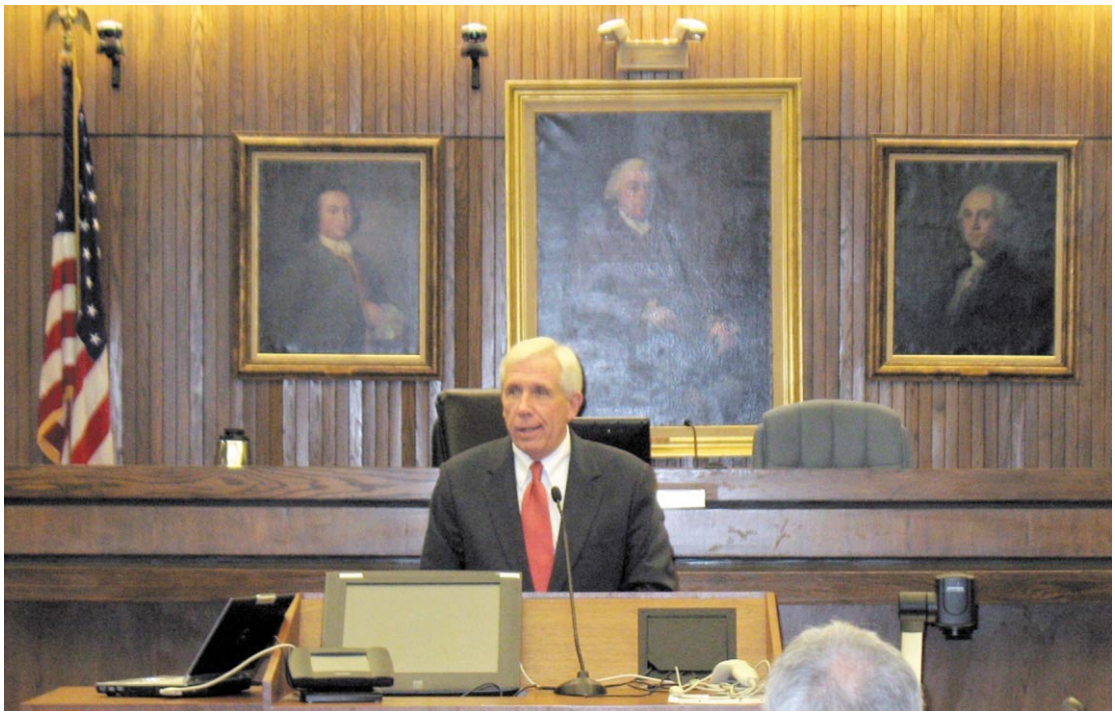
Dept of Management and Budget — *Debra Dunbar*

Dept of Information Technology — *James Simmons*

1-4 CENTER FOR LEGAL AND COURT TECHNOLOGY (Courtroom 21 Project)

The Center for Legal and Court Technology (Courtroom 21 Project) is a non-profit entrepreneurial research, education, and consulting public service organization that seeks to improve the administration of justice through the use of appropriate technology. Court-oriented, CLCT is a joint initiative of the College of

Courtroom Dedication Cable Cutting Tools



Congressman Frank Wolf

Other courts throughout the Commonwealth, the United States and other countries across the globe have approached Fairfax County to research and emulate the successes achieved by Fairfax County.

William & Mary Law School and the National Center for State Courts. CLCT works to assist courts, government agencies, law firms, law schools, judges, lawyers, court reporters, paralegals, legal technologists and other members of the legal professions. Through the Courtroom 21 Court Affiliates CLCT directly supports approximately three thousand judges and courtrooms in the United States and Canada.

Professor Fred Lederer is Chancellor Professor of Law and the Founder and Director of the Courtroom 21 Project. Martin Gruen serves as Deputy Director and oversees the technical components of the program. Both are recognized within for their efforts and were presented a plaque at the annual Courtroom 21 conference by the Honorable Judge Michael J. Cassidy to show appreciation for their efforts and expertise throughout the Courtroom 5E prototype project. Their assistance with the production of this report is acknowledged and provides a foundation of valuable information. All commentary published in section 4 was provided by Professor Lederer.

1-4.1 Courtroom 21 Court Affiliates

In recognizing the courts' are increasing interest in adopting courtroom technology, the Fairfax Courts joined the Courtroom 21 Court Affiliates program. The Affiliates program consists of an organization of those state, federal, and non-United States courts interested in the efficient, economical, and sound use of courtroom and related technology. In return for an annual subscription fee, Court Affiliates receive a variety of services, including consulting and access to a password protected web-site, and attendance at the annual Court Affiliates Conference. The Affiliates also assist CLCT with prototypical and experimental work. The Fairfax Courts are presently, and have been since 1994, a bonafide Court Affiliate patron.

1-5 COURTROOM DEDICATION

On October 10, 2006, a "cable cutting" ceremony was conducted in Courtroom 5E at the Fairfax County Courthouse to unveil the new high-tech courtroom. Congressman Frank Wolf served as the keynote speaker along with other State Delegates, Judges, and Clerks-of-the-Court. Project team members were also present with other key county and court staff. Congressman Wolf was instrumental in securing a grant to support the Courtroom 21 project and making the high-tech courtrooms possible. Several high-tech cases (as referenced in section 5) highlight the success of the prototype project and represent a major breakthrough for the adjudication process in Fairfax County and throughout the world.

2 Section Two — Technology Overview

2-1 THE COURTROOM

The Fairfax High-Technology Courtroom is located in Courtroom 5E at the Fairfax County Courthouse located at 4110 Chain Bridge Road, Fairfax, Virginia. This facility is a 1970's design with minimal existing infrastructure or technology. The existing courtrooms have limited poke-through floor outlets and most are in the wrong place to provide connectivity for the current courtroom-well furniture. The audio systems are dated and currently only the judge's microphone and witness microphone are in use. The ceiling speakers work but the overall audio reenforcement leaves much to be desired. The existing courtrooms accommodate a speaker phone for teleconferencing but have been found to be awkward to use and requires setting up and tearing down after each use. There are some visual display devices provided in the room, which include a wall-mounted x-ray light box, a wall-mounted whiteboard and a ceiling mounted projection screen. The courtroom was modified with a door system cut into the rear wall to allow media coverage of trials. A media camera may be mounted on a platform in the conference room behind the gallery entrance and an operator can film the proceedings. This camera requires an operator and allows only limited viewing angles of the courtroom.

2-2 INFRASTRUCTURE

As previously configured, the Fairfax High-Technology Courtroom represented a traditional courtroom with minimal and inadequate technology support. It required a major infrastructure upgrade, installation of a comprehensive evidence presentation system (including displays), videoconferencing, and key ancillary pieces of technology. The infrastructure of a modern technology-enhanced courtroom includes its cabling, audio and video hardware, switching components, and control systems. The infrastructure is both critical and fundamental. It is the infrastructure that makes possible the legal technology applications in the courtroom and it is the infrastructure that controls how easily and cheaply equipment can be maintained, repaired, and upgraded.

2-2.1 Cabling and the Floor

Although it is now possible to use wireless audio-video connectivity for a simple evidence presentation system, a major technology-enhanced courtroom requires the use of physical cabling. In an ideal world the cabling backbone should consist of fiber-optic cabling supplemented by category 5 or higher rated cabling. Although fiber is substantially more desirable than any alternative due to its high bandwidth and minimum distortion, it is also by far the most expensive cabling option in the short term. Current plans take cost factors into consideration, and we have recommended traditional cabling supplemented by category 5 or higher.

Pragmatically, it is not so much the nature of the cabling that is important; what is often critical is where and how the cable is physically placed. Easy maintenance and upgrading requires access to the cabling as well as the ability to lay new cable to locations previously thought unlikely to need connection. Past experience has proven conclusively that it is impossible to predict where one will need cable as little as six months after completion of a high-technology courtroom. Further, unless a raised floor system is used; technology-enhanced courtrooms are often designed with too little space to provide access for additional cabling.

Courtroom 5E exhibited this classic lack of adaptability and was clearly illustrated through the court's attempted use of a portable evidence presentation system. Concrete floors made wiring for the system impossible and hazardous. It is highly recommended that courtrooms be constructed with a raised floor system in the well area with a system that provides for easy access to installed cabling and the ability to quickly and easily install new cabling. Courtroom 5E uses an AMP PowerFlor system, a raised floor that has proven essential any number of times for both maintenance and upgrading. Future courtroom construction and renovations will include a raised floor system with carpet tile that will stand a minimum of 3 inches off the base concrete floor. This should meet all expected requirements.

2-2.2 Audio

Technology-enhanced courtrooms need capable and flexible audio systems. Such courtrooms normally need sound reinforcement; audio playback of media such as cassette tape, CD's, DVD's, and videotapes; audio for video-conferencing (with echo control); assistive listening; foreign language interpretation; and potential electronic court recording. Courtroom 5E introduces enhanced courtroom audio for these capabilities.

2-2.2(a) Microphones

Courtroom microphones must be accurate, simple to operate, and to the degree possible unobtrusive and non-disturbing to trial participants. This last

The infrastructure of a modern technology-enhanced courtroom includes its cabling, audio and video hardware, switching components, and control systems.

Courtroom Microphones

requirement is often difficult to obtain as microphones must be sufficiently directional to avoid picking up unwanted sound but sufficiently sensitive to pick up trial participants without needing to lean forwards into the capsule of the microphone. Microphone selection inherently requires a compromise between critical technical specifications and desirable but non-critical positioning. Courtroom 5E includes 12" gooseneck cardioid desktop microphones with a push-to-mute switch for the bench, clerk, and court reporter. An 18" gooseneck cardioid microphone with no mute capability is provided at the witness stand and 18" gooseneck cardioid microphones with mute capability are also used for the counsel tables and evidence presentation station. The witness stand also includes a headset microphone and connection for language interpretation. Connecting cables pass through a grommet in the bench desktop and connect to the audio system by a jack plate located underneath the bench.

Courtroom 5E also includes a sidebar microphone that will provide audio pickup of bench conferences when this microphone is in use through the audio control system to the court reporters location only. Future enhancements may allow for connection to an electronic audio recording device to greatly improve the accuracy and ease of recall of any particular statement. The microphone is a very sensitive omni-directional boundary type device. Again, the connecting cable passes through a grommet in the bench and connects to the system by a jack plate located under the desktop.

Hanging overhead or "choir" microphones for jurors are provided when potential jurors are voir dired in the box. These are very small microphones lowered from the ceiling. Their size and color allow them to blend in and not be too visible, but they are excellent for audio coverage of this area. This alternative allows coverage for attorneys that walk over to the jury area during opening or closing. Without jury microphones or wide area ceiling coverage, comments by counsel in this area might not be picked up.

Courtroom 5E has the capability of handling audio pickup in special circumstances, including the possibility of jury voir dire from the gallery. A wireless microphone system with a hand-held probe microphone provides the court with flexibility for alternate locations to present evidence or question potential jurors. Wireless microphones can be highly convenient but suffer from a number of deficiencies that must be clearly understood. They are not secure; any receiver on that frequency even outside of the courtroom can receive the signal. As they run on batteries, someone in the courtroom must be responsible for keeping the microphone loaded with charged batteries. A third issue relates to the type of microphone. Many people recommend lavalier type microphones. These will do an unquestionably good job of reproducing sound. The problem is that they will reproduce any sound near them unless they are turned off. Trials could be placed in jeopardy because a confidential attorney — client conversation was picked up and broadcast. A probe type microphone has to be held and creates just enough awkwardness to keep the user cognizant of its presence.

2-2.2(b) Speakers

Audio outputs, whether for courtroom sound reinforcement, videoconferencing, or the playing of previously recorded material require speakers to be heard. Courtroom 5E has a number of installed speakers including speakers at the judge's bench, witness stand, clerk table, and jury box. Ceiling speakers are provided to complete the sound reenforcement for the gallery area. The installation of a quality audio system in future courtroom renovations will require additional courtroom speakers and the replacement of some or all or the existing ones.

2-2.2(c) Audio control and processing equipment

Microphones, VCR's, audio cassette players, video conferencing and the like represent the audio inputs in a technology-enhanced courtroom. Speakers, electronic recording systems, and external communication links are the customary audio outputs. It is the infrastructure that lies between the inputs and outputs that tends to be critical.

In addition to the necessary cabling, technology-enhanced courtrooms need sophisticated digital audio processing and control systems. These systems

take the input audio and ensure that it is transmitted to the correct outputs in as pure a fashion as may be possible using criteria established by the courts that dictate who hears what and when. Audio processing ensures that the audio is free from feedback due to the proximity of microphones to speakers and eliminates unwanted mechanical noises typical of ventilation systems by the carefully planned selection and configuration of the available features of the audio processing equipment. Modern control systems not only permit the obvious, such as volume control, but can also via matrix switching make input/output connections immediately via software control. This allows instantaneous rerouting of audio to cope with any previously unexpected requirements as well as the addition of new equipment to the system. Courtroom 5E utilizes BiAmp AudiaFlex equipment for these purposes. Computer controlled audio, including computer controlled switching, has another advantage of substantial importance: *it decreases the possibility of unapproved control setting changes*. Years of experience working with the Courtroom 21 project have shown that because appropriate audio volume is a subjective matter, staff are nearly always ready to change audio settings to "improve the sound." Often the staff members have at most a minimal understanding of the complex audio system and while improving perceived sound quality for VCR playback, for example, the staff member may have just made it impossible to have an effective videoconference without resetting the system. A computer software controlled system can be reset instantaneously and is safeguarded from tampering - an unauthorized person is not likely to be able to locate the control screens.

2-2.3 Video

Technology-enhanced courtrooms are predominantly visual in nature. Counsel routinely present evidence and make arguments visually. This necessitates visual displays in the courtroom. At the same time, both courtroom security and videoconferencing require cameras to originate live video images of what is occurring in the courtroom. Accordingly, it would be reasonable to describe the courtroom's video infrastructure as consisting of displays, cameras, control systems, and cabling (2-4), although the courtroom video conferencing systems require the addition of the proper data telecommunications lines.

2-2.3(a) Displays

Visual displays are the defining element of a technology-enhanced courtroom. "Visual displays" can consist of televisions, plasma screens, CRT computer monitors, large and small LCD flat panel displays, and a host of other possible display technologies. They all serve to show visual images, whether live or recorded television or computer/data. In practice, courtroom displays are customarily used to show document camera images (images of documents, pictures, and physical objects placed under a vertically-mounted television camera); VCR, CD, and DVD recordings; computer images; and videoconferencing-originated "television." It is important to note that ordinarily not all displays are on at the same time. Each display has a given purpose and only those displays that are required for the given use are turned on. Furthermore, a well designed courtroom should be able to show different images on different screens. A remote witness, for example, may be visible on a large plasma screen, while the testimony documents appear on smaller screens in front of judge, counsel, and jurors.

Courtroom 5E uses plasma and LCD screens, although rear and front projection systems may also be used. High-Definition (HD) television is now available for home viewing, however, the lack of affordable HD cameras and HD recorded material means that few if any courtroom displays use their HD capability. It is not unreasonable to expect that the video capability of courtrooms will be required to evolve into HD systems and this will include upgrading certain non HD ready monitors that currently exist.

2-2.3(a)(2) Large screen displays

At present, large display units (40 inch and larger diagonals) normally consist of plasma screens and front and rear projection units. Flat screens are preferred as they can be hung on a wall and are aesthetically pleasing. Plasma screens ordinarily are the large flat screen displays of choice although digital light processing (DLP) and LCD large flat screens are available and the technology behind these types of displays is continually evolving. Although plasma screens are at risk for "burn-in," the creation of a ghost-like image if the same fixed image is displayed for too long a time, they tend to be cheaper and brighter than DLP or LCD screens. Plasma's are now available in up to at least 72 inch diagonal screen sizes. Courtroom 5E was installed with a large 62 inch plasma screen behind the witness stand, both for remote witness images and to provide an in-court witness the ability to make visible to the courtroom annotations made over exhibits through the use of touch screen video panels

Projection systems require a projector and a screen. Front projection units project images on fixed or drop-down screens and provide the largest images available for the courtroom, frequently ten feet or larger diagonals. In Courtroom 5E the unit hangs from the ceiling (complicating bulb replacement and

Technology-enhanced courtrooms are predominantly visual in nature.

Visual displays are the defining element of a technology-enhanced courtroom.

wiring). Although very bright and reasonably priced projectors are now available (a substantial improvement over past years), projector bulbs begin to degrade immediately so that the image becomes darker continuously over time. Replacement bulbs are expensive, often costing more than $ 250 each. Front projection systems can be problematical for windowed courtrooms with large amounts of daylight, especially as the bulb degrades. Customarily such systems require some form of automatic blinds or curtains if the courtroom has substantial windows. Rear projection units, on the other hand, tend to be far more resistant to washout from bright room light. The principal shortcoming of rear projection systems is that they are very large and take up a substantial amount of floor and often wall space.

For evidentiary admissibility purposes, image size is a relevant and important factor.

Counsel frequently like to project evidence on large screens believing that the large image enhances persuasion and provides a common focal point for a jury. Judges sometimes find such screens troublesome because they may be unduly persuasive. Sight lines often complicate use of large screens, especially front projection screens. All too often the only position from which counsel and jury can view such a screen does not work for the judge. Although a judge may see the same image on a bench monitor, for example, that is not the same image as shown on the large screen. For evidentiary admissibility purposes, image size is a relevant and important factor.

2-2.3(a)(3) Small screen displays

Small flat screen LCD displays are the display means of choice for many courtroom applications. One or more such displays are placed on the bench, counsel tables, court clerk's station, witness stand, court reporter's station, courtroom podium/evidence presentation station, and in the jury box (one LCD display for every two jurors). LCD displays unit size meets the customarily 17 inch diagonal in size (with bench units of 20 or more inches sometimes being selected). LCD displays can be touch screens as well and witness and counsel displays are installed with this capability to allow a witness or attorney to visibly annotate documents and other pieces of evidence.

2-2.3(b) Cameras

Courtroom television cameras customarily serve two purposes; security and video conferencing. Although the same cameras could be used for both purposes, the different needs justify two separate sets of cameras. When a courtroom participant such as counsel examines a remote witness, it is essential that the display showing the remote witness be located in line with the camera that telecasts the image of the counsel to the remote witness. That way the remote witness will be looking directly at the examining lawyer; otherwise in the remote location it will appear to the remote witness as if counsel is talking to someone else. Voice activated camera switching eliminates the need for manual redirection of camera views during video-teleconferences and provides the far end with a direct video of the person speaking.

Cameras are also important for those courts that make an audio-video court record. In those courts, court proceedings are videotaped with the official appellate transcript becoming the official text transcription of the recorded tape. *Courtroom 5E is not yet conducting electronic recording transcripts but is preparing the infrastructure to be able to adapt to this technology in the future.*

Courtroom cameras ordinarily are color CCD cameras of security grade. At present, the Ninth Judicial Circuit in Orlando Florida (Courtroom 23) is the only courtroom known to have installed professional quality broadcast cameras for general teleconferencing needs and broadcast. These are desirable for a court that wishes to provide a visual feed to television media. The 5E prototype includes two broadcast quality cameras that are provided strictly for that purpose. At present they are "overkill" for other purposes as neither videoconferencing nor web-based video can benefit from the enhanced quality of the cameras. The future plan for the Fairfax County courtrooms does not include providing broadcast quality cameras. Instead, a "media tap" will be provided for news organizations to attach their own equipment to. This reduces costs associated with this capability while accomplishing the same broadcast objective.

Fiber Optic Cable

2-2.4 Control systems and cabling

Technology-enhanced courtrooms are video-centric. Although in-courtroom cameras usually feed only the videoconferencing system (which will need its own camera selection capability), the courtroom

needs the ability for judge, deputy clerk, or counsel to choose which visual display inputs (document camera, VCR/CD/ DVD player, counsel computers and videoconferencing) to display and where they will display. In a high-end courtroom this necessitates a matrix switching system. Control of this system generally is done by a computer-type control system that is operated via a visual control panel. Courtroom 5E uses a sophisticated Crestron programmed control panel that shows an image of the courtroom settings with clearly understandable icons for each available selection. Ordinarily, the video sources are displayed on the bench, counsel, and clerk displays with the panel able to also route them to witness and jury or other locations on command. The same switching and control system can also control lighting and various other technologies, including court recording technologies.

Where the courtroom will be controlled from is sometimes controversial. Experience indicates that different judges have different preferences. Courtroom 5E allows the courtroom to be controlled by a judge or deputy clerk using an appropriate control panel. The judge has an override panel and a "kill-switch" that can instantly blank all visual displays. A control panel is also available to counsel so that, *with the court's permission*, counsel can personally switch among the inputs used by the lawyer when presenting evidence. The counsel panel has fewer options than those available to judge and clerk.

2-2.5 Millwork and furniture

The courtroom millwork and furniture is custom-designed for technology so that:

1) *Cabling is channeled from the floor directly into the millwork and furniture without being visible,*
2) *Displays are built-in or mounted so as to present the lowest possible silhouettes and to minimize blocked sight-lines,*
3) *Counsel tables are designed for easy access to power, audio-video and other connections,*
4) *Participants are positioned to see appropriate displays, especially any necessary large screens,*
5) *Participants can be assisted by giving them the most effective access to key technology.*

Courtroom 5E made every effort to accomplish these goals consistent with the need to preserve the current millwork and furniture. In particular, the courtroom strives to make the technology as invisible as possible and to ensure that all critical display sight lines are maintained

2-3 EVIDENCE PRESENTATION

Perhaps the most compelling reason for technology-enhanced courtrooms is the use of electronic evidence presentation technology. It is the use of this technology that enhances fact-finding and can result in substantial time savings. Ordinarily, evidence presentation technologies include document cameras, audio cassette players, videotape/CD/DVD players, computers, and "white boards."

Document Camera

Courtroom 5E uses one Elmo document camera located at the Litigator's Podium.

2-3.1 Document cameras

The most commonplace, and simple, way of presenting material in court via technology is to use a document camera. A document camera is simply a vertically mounted TV camera aimed down at a flat surface. The lawyer puts a photo, document, or object on the surface, and the camera instantly displays the image on the video displays or monitors to which it is configured. The camera has buttons permitting easy and fast close-ups. The camera may also be able to change negatives to positives (and the reverse) which assists in the display of x-rays. Focus can be automatic or manual. A microscope capability can be added to display slides. The document camera excels at display of photographs and small blocks of text. Although most cameras can display a page of 8½ x 11 inch paper, the camera usually cannot do so adequately, requiring counsel to zoom in to a smaller portion.

Document cameras are versatile display instruments with the ability to output digital data rather than composite video which makes them more easily compatible with infrastructures designed to display computer imagery. Higher-end models can capture images and sometimes provide image comparison. Many of these higher end functions, however, require use of remote controls. Varying placement of the camera arm and lights may interfere with sight lines. Courtroom 5E uses one Elmo document camera located at the Litigator's Podium.

2-3.2 Audio and video players

Counsels often wish to use an audio or audio/video source to present evidence. As most audio sources now are in the form of CD, DVD, MP3 or other computer-type technological sources, comparatively few courtrooms have permanently installed audio cassette players. However, such players may be critical if local law enforcement is still using cassette recording for wiretaps or other forms of evidence collection. Otherwise, the infrastructure should be designed to permit the ad hoc connection of a cassette player to the system.

Although videotapes are still in use, video is

increasingly moving to CD's and DVD's. Accordingly, Courtroom 5E offers a combination of audio and video players that permit playing videotapes as well as disk media. Lawyers are increasingly using digital cameras to collect trial evidence. In Courtroom 5E, camera images can be downloaded into a computer and used to create a computer-based presentation. Future Fairfax courtrooms will be technology-enhanced to accept a digital camera's video USB, or "firewire" data output.

Presentation Podium

2-3.3 Computers

Other than document cameras, computers (laptops) are the lawyer's choice of evidence presentation technology. Because of concerns about the security of the courthouse computer network, Courtroom 5E does not equip their courtrooms with desktop computers; there is simply too high a chance that media carried in by lawyers not only will be incompatible with the court's programs but more importantly may carry harmful viruses. The courtroom infrastructure was designed to be able to display the visual output of notebook computers carried into the courtroom by counsel. Because such computers output a range of resolutions and frequencies, the display infrastructure must be highly robust. Pragmatically, this means that the court cannot economize by purchasing limited quality display devices.

Ordinarily, counsel will use computers for PowerPoint, the playing of encoded video, and the display of evidence, especially using one of the high-order evidence display software packages.

A decision to omit a desktop computer from a technology-enhanced courtroom unavoidably raises the issue of pro se representation. Although the technological implications of attempted pro se representation in a technology-enhanced courtroom remain to be worked out, there is a reasonable argument that if the court welcomes counsel with computers, the court should make available a "loaner" notebook for pro se litigants. Such a statement raises serious issues of use, training, maintenance, and even avoidance of theft and physical harm. Nonetheless, the issue is a serious one and should be further discussed as a priority matter incident to the construction of such a courtroom.

2-3.4 "Whiteboards"

Whiteboards are vertically mounted white rectangular boards on which people write, usually with colored markers. Whiteboards can be mounted on walls or placed on easels. High technology whiteboards provide other extraordinary options, however. In their simplest use, a high technology whiteboard transmits writing to monitors fed from the connected computer, in the same color as that used on the board. The writing on the board can be preserved both by saving the image to disk on the attached computer and by printing it on a connected printer. One of the great advantages of the board is that once an image is saved to the computer it can be restored immediately even if the image has been erased in whole or part on the board itself. Whiteboards can be especially effective for witness drawings or counsel's opening statement and closing argument.

Projection whiteboards provide even greater possibilities. They are available in two varieties. One type consists of the basic whiteboard with a computer connected front projection system. The other is a self-contained rear projection system. Both allow the user to draw on any projected image. Counsel can project, for example, the image of a document and have a witness circle a key provision in color, either with an electronic pen, or often just with a finger. Perhaps the most visually attractive whiteboards are large flat screen plasma monitors with a white board "overlay." The overlay is simply an additional screen that fits over the monitor turning it into a touch screen monitor that can be annotated by counsel or witness, by electronic light pen, or even with a finger. These types of whiteboards permit easy remote operation of a computer. Indeed the white board comes into its own when operated in conjunction with a high end evidence display software package. Using the proper software, a witness can use a finger to capture a paragraph from a displayed document, enlarge it, and annotate it in color in seconds.

2-3.5 Evidence presentation station

One of the key questions concerning the use of evidence presentation technology is where to install it and where lawyers must be to use it. Often it is court custom that controls the answer. However, as important as custom may be, for reasons of economy and ease of maintenance, it is usually best to place all technology that the lawyers or their assistants may use in one place, a location that can be easily reached by counsel without favoring any given party, and a location from which counsel may present the case to judge or jury. Given most courtroom designs, this usually suggests placing the evidence presentation station between the principal counsel tables, either in line with them or in front of them. Position is frequently problematical as sight lines are critical and an equipment location may clash with them.

Courtroom 5E modifies the Courtroom 21 Litigator's Podium to include all of the necessary presentation technology and connections, including a portable control panel. Some lawyers prefer to use assistants or vendors to operate their technology. Courtroom 5E has installed audio and computer video inputs in or on the counsel tables so that an assistant may operate a computer from the table.

2-4 VIDEO CONFERENCING

Video conferencing is becoming a standard feature in courthouses throughout the world. The primary courtroom use of videoconferencing is for the testimony of a remote witness, the appearance of a remote lawyer, and remote first appearances or arraignments (although some courts and Courtroom 21 have used it for remote judges). The remote testimony may also include remote evidence presentation which should be displayed simultaneously with the video of the presenter and introduced into the electronic evidence presentation system of the courtroom.

Because most courts use videoconferencing primarily for remote first appearances or arraignments and occasional remote witness testimony, the best place to install the primary videoconferencing display device is behind the witness stand — so long as the judge and jury may clearly see the image. The remote witness or participant appears in the courtroom in a display device, preferably life-size. Video conferencing requires a camera at the source end and target end, a video display device, ISDN lines (high capacity telephone lines) or a computer network connected to the internet, and a CODEC (coder/decoder). The codec is the most expensive part of the system. In some configurations, a camera co-located with the display ensures that when a courtroom participant looks at the remote person, as in counsel questioning a remote witness, there is effective eye-to-eye contact.

With today's technology, video and sound should be perfectly coordinated; only the most rapid movement may show some variance. To ensure the largest degree of use from a single videoconferencing system, the principal courtroom videoconferencing display device should be able to be relocated with reasonable ease and the courtroom's cameras should either be placed to permit use of videoconferencing for participants other than a witness or should be subject to at least manual re-positioning. It should be noted that with proper switching a single codec can support multiple videoconferencing systems, so long as only one is used at a time.

2-5 COURT RECORD

Although real-time transcription has been available for many years, it is now far more available than in the past. More and more court reporters are prepared to offer the service. Real-time transcription can be transmitted through the Internet to the office, to a consulting expert, or to anywhere counsel may need. Coupled with counsel communications, discussed below, real-time means that the lawyer can have a non-resident team that is fully cognizant of everything that is happening in court just as it happens, and able to respond to trial counsel's immediate needs.

Court record technology is currently developing rapidly and is converging towards a merger of all the applicable technologies. The Courtroom 21 Project, for example, makes a multi-media court record that consists of the real-time transcript, digital audio and video, and images of the evidence as well. The record can be made available remotely via password or published in real-time to the web for worldwide access. This not only further enhances the possible use of remote assistants; it also holds the promise of changing the nature of appellate review in non-jury cases.

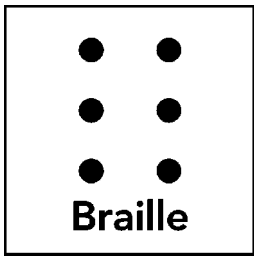
Courtroom 5E does not currently provide electronic recording, however, the infrastructure is now in place to allow both digital-audio recording and real-time court reporting systems. Digital recording will require acquisition of the appropriate recorder system as well as connections to the courtroom's microphones and, for playback, speakers. As court reporters will supply their own hardware, the courtroom will need the necessary wiring for real-time and the ability to route the court reporter's visual output to the courtroom's display screens. This last item is primarily for demonstrations; operational real-time is displayed on either bench and counsel monitors or captured by their computers.

Courtroom 5E modifies the Courtroom 21 Litigator's Podium to include all of the necessary presentation technology and connections, including a portable control panel.

2-6 OTHER TECHNOLOGIES

2-6.1 Assistive technology

All trial participants and observers should be able to function freely and easily in the court environment. Assistive technologies assist those with special needs, especially those who have difficulties hearing, seeing, and moving in the courtroom environment. Court reporter-supplied real-time transcription enables trial participants who cannot hear to read the court proceedings (those who can hear but not well can use infrared headphones for personal audio reinforcement). Video-conferencing-based sign language interpreters can provide sign language interpretation to jurisdictions lacking such interpreters. Blind participants can read documents through scanning and conversion to Braille (as well as programs that will read documents to the hearer). Lifts enable wheelchair-bound participants to take their appropriate courtroom locations with dignity. Future courtrooms should be designed so as to specifically accommodate at least those needs which are easily and reasonably predictable. Courtroom 5E provides assistive listening devices for those who are hard-of-hearing but can hear to some degree (consisting of an infrared transmitter connected to the sound reinforcement system and an accompanying infrared receiver used by the person requiring assistive listening).



2-6.2 Language interpretation

Current technology does not include a replacement for human interpreters. Instead technology permits the easy access in the courtroom by technology to interpreters who may either be elsewhere in the courtroom or courthouse or somewhere else in the world but connected by modern communications. Future interpreting technology will include the ability to use a speaker telephone system to connect remote interpreters into the courtroom to provide consecutive, real-time interpretation in multiple languages. Courtroom 5E does include the necessary telephone lines and equipment to permit remote consecutive interpretation. Generally, there are two purposes for language interpretation. The first is to translate the testimony of a witness or defendant into the language of the court, English. The second is a system that provides interpretation of the court language, English, into the native language of gallery spectators. All of this is accomplished in tandem with the assistive listening system described above.

2-6.3 "Counsel communications"

The advent of the internet and the world-wide-web has made instant communications by e-mail and instant messaging as important as access to nearly unlimited amounts of information. Trial lawyers increasingly are seeking courtroom broadband internet access to permit them to have two-way immediate communications with associates and support staff in their firm and elsewhere. At the same time, giving counsel access to the courthouse network raises substantial security issues. Such issues can be dealt with reasonably by proper firewalls and other security measures. Courtroom 5E provides the ability for broadband internet access; however, the Fairfax Courts do not believe it is wise to do so using the county/court's private enterprise network. The Fairfax Courts do contract with a private firm to make wireless access available in the jury assembly room. This arrangement with the Circuit Court allows the installation and access to a privately owned external network at no expense to the court but does require the court's permission to charge counsel for its use.

3 Section Three — Courtroom 5E Technology by Location

The Judges Bench

3-1 JUDGES BENCH

3-1.1 In general

Technology requirements for the judge's bench include:

- *microphone;*
- *side bar microphone;*
- *speaker;*
- *evidence display monitor;*
- *computer connection into the presentation system;*
- *court network connection;*
- *real-time transcription connection;*
- *duress alarm, and*
- *telephone and full system controls with judicial "kill" switch to stop proceedings if required.*

3-1.2 Microphones and speakers

The judge is supplied with a 12" gooseneck cardioid desktop microphone with a push-to-mute switch. This microphone can be adjusted so that the judge is not required to speak close to the microphone head. The microphone is installed close to the center of the judge's bench. The connecting cable is routed through a grommet in the judge's bench and connects to the system by a jack plate located under the judge's bench.

The bench also includes a sidebar microphone to provide audio pick-up of bench conferences and to allow the court reporter or the audio recorder to capture a record of the conversation. This microphone audio is directed electronically to the court reporter only (or an electronic audio recording device if utilized). The audio is never sent to the public address sound reinforcement system. This microphone is a very sensitive omni-directional boundary type microphone. The connecting cable also is routed through a grommet in the desktop and connects to the system by a jack plate located under the desktop.

A box speaker is mounted under the bench desktop for local sound reinforcement.

3-1.3 Computer connections

The judge is provided access to a computer at the bench. The judge may but does not have to bring a personal notebook computer into the courtroom. The preferences of some judges are such that even if a desktop system is provided, they will choose to bring a notebook computer as well. Accordingly, connections for a notebook computer are provided for any desktop system the court may choose to install.

The bench computers are able to output audio and video into the courtroom evidence display system in order to present calendars, legal research, jury instructions and other such material to the courtroom monitors. They also include a network connection into the courthouse computer network to provide the judge with a high-speed Internet connection, as well as access to the courthouse databases.

The judge will also need a connection to the court reporter's real-time transcription network. This is imperative for the judge to be able to follow the electronic record of the proceedings, make notes for further reference and verify the accuracy of the record of the proceedings. Computer connections are located in a convenient to use pop-up device. The judge is also connected to a printer. The printer's location is significant and determines the degree of printer noise that can be tolerated.

3-1.4 Display and controls

Courtroom 5E provides the judge with visual displays. However, every display provides at least the possibility and usually the reality of blocked sight lines to and from the bench. If not configured correctly, the judge could be walled in by a fortress of display monitors. Sight line problems are minimized by building the displays partially into the bench. Care is taken to minimize the number of displays needed. The attempt is made to not have to switch among

different views on a given monitor. Many judges are sufficiently uncomfortable with technology that they find the prospect of active technology control off-putting.

If the court provides the bench with a desktop computer, that computer must have a monitor. The monitor should be a 15 inch or larger LCD display. Because the judge may take the bench with a notebook computer, the bench should also have room for that computer and its built-in monitor. Courtroom 5E requires an evidence monitor so that the judge may view video evidence presented in the courtroom. A 17 inch flat-screen LCD monitor with XGA native resolution is provided so that the monitor also can be used as the system control panel.

The system control panel is a touch-screen control panel that is connected to the central control system in the main electronics rack. This screen is programmed to allow the judge to control all aspects of the courtroom technology systems including the audio, video presentation of evidence, remote testimony system, room lighting and any other system that the judge wishes to oversee. The screen design is currently being enhanced to make the controls as simple to understand as possible. Combining the control panel with the judge's primary evidence display monitor could be problematic.

Remote Witness Technology

3-1.5 Other technology

For security purposes, the bench area includes a duress alarm button. This button will activate an alarm at the sheriff's security office, indicating an emergency in the courtroom. The button also activates an audio/video feed to a sheriff's monitor so that security personnel will be able to hear and see the situation in the courtroom.

3-2 THE WITNESS STAND

3-2.1 In general

The witness stand is provided with a microphone, speaker, annotatable touch screen evidence display monitor, and language interpreter microphone connection. A large screen plasma display for remote testimony and viewing of evidence is wall-mounted behind the witness.

3-2.2 Microphones and speakers

For witness testimony, a very sensitive microphone is positioned close to the witness with a volume control located on the main audio control screens at the control panels. An 18" gooseneck cardioid microphone without user mute capability is connected to the system by a jack plate located under the desktop. A box speaker is mounted under the bench desktop.

3-2.3 Computer connections

Although the witness will not ordinarily use or need a computer, a hard-of-hearing witness may benefit from real-time transcription. Accordingly, for ADA purposes the witness position should provide connection to the court reporter's real-time transcription feed. This can be done either by providing a video connection linked to the reporter's computer video output or more easily by providing a real-time computer connection so that a notebook or other computer can be connected for the witness.

3-2.4 Display

The witness stand includes an evidence monitor so that the witness can view visual electronic evidence. A 17" flat-screen LCD monitor with XGA native resolution and touch-screen capability for annotation of evidence by the witness is provided. The connecting cable extends through a grommet in the witness bench area and connects to the system by a jack plate located under the witness bench. Witness monitors frequently present sight line problems as witness demeanor must be seen clearly by at least judge and jury. As a result, display positioning is especially important. Customarily placing the monitor to the left or right resolves the problem.

A 62 inch flat screen plasma monitor is mounted on the wall behind the witness stand. This permits a physically present witness to point to visually displayed evidence or to annotate key portions, allowing the fact finder to both see the interaction with the evidence and to observe the demeanor of the witness. Perhaps more importantly, when remote witnesses testify, Courtroom 5E controlled testimony allows a witness to be seen life-size in approximately the same position the witness would be in were the witness to be physically in the courtroom. Inasmuch as the large screen is easily visible in the courtroom, it is the primary vehicle for the display of defendants when appearing at a remote first appearance or arraignment.

3-2.5 Other technology

Witnesses increasingly need language interpretation. As such interpretation can be furnished via electronic connections to interpreters. A head-worn microphone is supplied with connections to both the sound re-enforcement system and the infrared hearing assistance system. If telephone or remote interpretation is to be used, the courtroom provides a telephone line/telephone interface or a speaker telephone connected sound re-enforcement system with an infrared hearing assistance system.

3-3 COURTROOM CLERK

3-3.1 In general

The courtroom (deputy) clerk's desk is equipped with microphone; speaker; evidence display monitor; full system control panel; computer with court network connection; scanner; printer; fax; telephone; real-time transcription connection; digital audio recording system; and duress alarm.

3-3.2 Microphones and speakers

The clerk's desk includes a 12" gooseneck cardioid desktop microphone with a push-to-talk switch. Even with an automatic microphone mixing system, this microphone is muted except when speaking is required. The connecting cable extends through a grommet in the desktop and connects to the system by a jack plate located under the desktop. A box speaker is mounted under the bench desktop.

3-3.3 Computer connections

In light of the administrative duties required, the clerk's position includes a permanently installed computer system, CPU and a 17 inch flat screen LCD. Connections include a network connection to the courthouse computer network for high-speed internet connection and access to the courthouse databases. This computer is connected to the court reporter's real-time transcription network so that the clerk can assist the judge with following the electronic transcript. The clerk computer is connected to a scanner and printer and may be shared with the judge should desk space or cost so indicate.

The clerk's position also requires a control panel. Similar to the judge's control panel, this is a touch-screen control panel which is connected to the central control system in the main electronics rack. The Courtroom 21 experience has been that because the clerk controls a number of different electronic systems (e.g., the audio system and potentially a courtroom electronic recording system), the clerk may need the ability to use a single keyboard and monitor to control multiple systems. Should this be the case, a KVM-type switch may be used.

The courtroom will require a digital audio recording system to provide the ability to make a court record in the absence of a court reporter. This should be a standard four-track court audio recorder with logging capabilities.

3-3.4 Display

The clerk computer includes a flat screen 17 inch LCD. The clerk's evidence monitor is a 17" flat-screen LCD monitor with XGA native resolution. Because this ordinarily is the primary control panel, it is not combined with the evidence display panel. The connecting cable should go through a grommet in the desktop and connect to the system by a jack plate located under the desktop.

Future Courtroom

3-3.5 Other technology

Although 5E does not fax from the courtroom, the clerk position could be supplied with a facsimile machine for sending orders and other papers to and from the courtroom. The clerk position also includes a telephone with a visual signal instead of an audible ringer. As noted above in 3-3.3, the courtroom also will require a digital audio recording system.

3-4 COURT REPORTER

3-4.1 In general

The court reporter location will allow for real-time transcription network and connections for a back-up audio recording system. A hearing enhancement system allows the reporter to easily hear all courtroom activities including bench conferences.

3-4.2 Microphones and other audio equipment

The court reporter's position can include a microphone with a push-to-mute switch. The connecting cable extends through a grommet in the desktop and connects to the system by a jack plate located under the desktop.

Courtroom 5E does not currently use electronic court reporting, however, the infrastructure is in place to do so. Should that be the case, the court reporter's position would require an audio assistance

panel to provide connections for recording and playback, a headset connection, a dedicated jack to the bench conference microphone and a volume control for the headset. The recording and playback connections provide for the use of a single-track audiocassette recorder for the court reporter to use as a back-up system. The headset connection would allow the court reporter to be able to monitor all microphones located in the courtroom. The connection would provide a volume control to allow the court reporter to adjust the sound to a comfortable level. This same system is connected to the sidebar microphone to allow the court reporter to monitor a bench conference without relocating to that position. The sidebar connection is isolated from the main audio system either through a switch or a separate headset jack or routing control of the audio processing system.

3-4.3 Computer connections

At present, customary court practice is to retain privately employed court reporters that provide their own court reporting equipment, normally a "writer" and a notebook computer. Assuming this to be the case, the court reporter position does not need a computer but does require appropriate computer connections. The critical connection would be to the court reporter's real-time transcription distribution network. This capability makes the draft real-time electronic transcript available to the judge, counsel, and, if need be, hard-of-hearing witnesses and jurors. The court reporter does not require a connection to the courthouse network, although the court may choose to provide this. Should the court choose not to do so, it may wish to provide an internet connection if it provides one to counsel.

Courtroom 5E has been equipped with video printers, printers that generate a high-quality… photograph-type print of any digital material presented on the courtroom monitors, including any annotations of that material.

3-4.4 Display

In order to enhance case comprehension, the court reporter can be provided with an evidence monitor, preferably a 17" flat-screen LCD monitor with XGA native resolution. The connecting cable channels through a grommet in the desktop and connects to the system by a jack plate located under the desktop.

3-4.5 Other technology

The display of visual information as evidence and argument often results in the need to print out copies of the displayed material, if only for purposes of a traditional paper court record. Courtroom 5E has been equipped with video printers, printers that generate a high-quality (albeit often small) photograph-type print of any digital material presented on the courtroom monitors, including any annotations of that material. Given that current printer technology permits larger-size quality color printing either by inexpensive inkjet or affordable color laser printer, it is not clear that the "traditional" video printer makes continued sense. However, the courtroom needs the basic quality color printing capability, and an appropriate print device may best be located at the court reporter's position, or, should this be undesirable, at the clerk's position.

3-5 COUNSEL TABLES

3-5.1 In general

Courtroom 5E has two modified counsel tables with the capability to add a third counsel table. Although most cases have only two parties, the high probability of multi-party proceedings in a major technology-enhanced courtroom may require at least three such tables. Each counsel table is provided microphones; evidence display monitors with annotation capability through the touch screen aspect of the monitor; notebook computer inputs for counsel table presentations; real-time transcription connection and computer internet connection. The design of the tables requires consideration for the possible use of any equipment being used as a weapon and the elimination of bias and influence on the jury if restraining devices; handcuffs, leg shackles are worn by a prisoner while sitting at the counsel table.

3-5.2 Microphones and speakers

Counsel tables include one 18" gooseneck cardioid desktop microphone with a push-to-mute switch. If multiple attorneys are routinely expected, two microphones per table can be accommodated. Note that "push-to-mute switches" mean that anything that an attorney may say at the counsel table will be picked up by the courtroom audio system if the attorney fails to mute the microphone. Although this is sometimes highly undesirable, the alternative, a push-to-talk switch position, would result in lawyers constantly forgetting to enable their microphones.

The microphone connecting cable is channeled through a grommet in the desktop and connects to the system by a jack plate located under the desktop. An optional box speaker may be mounted under the bench desktop.

3-5.3 Computer connections

Customary practice is for counsel to bring notebook computers with them to trial. Each counsel table has the capability to provide counsel a connection to the court reporters real-time network. Based on Courtroom 21 experience, it is recognized that most lawyers prefer their evidence presentation technology to be operated by others. Therefore, each

counsel table is provided the ability to display computer material from the counsel table (in addition to the primary evidence presentation station).

The need for electrical power is self-evident. However, it is worth emphasizing that in the case of the counsel tables, easy access to multiple outlets, preferably mounted on the tabletop in a pop-up device or, if need be, easily reachable through the tabletop is highly important as we can expect counsel frequently to need to connect and disconnect notebook computers.

3-5.4 Display

Each counsel table is equipped with a 17 inch LCD monitor to display to counsel material presented by the judge, clerk, witness, or other counsel. In addition, these displays provide the ability to annotate presentation material by including touch screen technology.

Evidence Presentation Station

3-6 EVIDENCE PRESENTATION STATION

3-6.1 Podium

The most fundamental function of a technology-enhanced courtroom is the electronic presentation of evidence. For reasons of efficiency, appearance, maintenance, and economy, Courtroom 5E uses a single evidence presentation station located between the primary counsel tables. This station is equipped with a document camera; DVD/CD/VHS audio-video player; audio cassette player; other audio system connection; digital evidence annotation; and evidence system controls. This does not prohibit the presentation of computer-supplied material from counsel table. That option is intended, however, as a secondary means of presentation. The design of the evidence presentation station is critical and requires further discussion among all those concerned with the courtroom's design.

3-6.2 Microphones

An 18" gooseneck cardioid microphone with no mute capability is installed at the evidence presentation station. It is connected to the courtroom audio system by a jack plate located under the desktop.

3-6.3 Computer and other connections

The evidence presentation station is a major source of digital inputs. The courtroom infrastructure is wired to accept the visual output of two notebook computers, the audio output of at least one such computer (at present computer audio is used by attorneys far less than video), the visual output of a document camera and a combined DVD/CD/Video player, and the audio output of an audio cassette player, DVD/CD/Video player, and the microphone. The station is also able to display on its monitor the courtroom visual evidence feed.

Counsel has a variety of technological tools for evidence introduction and opening statement and argument with the capability to switch among them as needed. Although the courtroom's wiring permits both the judge and courtroom deputy clerk to do this, it may be inefficient for them to have that responsibility. Courtroom 5E is supplied with a touch screen control panel allowing counsel to switch among the evidence station's potential inputs. The control panel is subject to override by at least the judge's control panel. Counsel has the ability to change the selected electronic evidence. Currently, the judge reviews this evidence from the bench evidence monitor and the judge controls what to publish to the witness, jury box and gallery monitors.

The Courtroom 5E experience has been that many lawyers have little or no problem connecting individual notebook computers to the Litigator's Podium display inputs. However, it is also recognized that for reasons of protection of work product as well as possible personal use, counsel ordinarily will not leave a computer on the Podium while opposing counsel, for example, crosses a witness. With this in mind, there may be no reason to provide two notebook display connections. However, the capability exists should there be a circumstance where counsel would in fact leave their computers at the podium or one computer becomes the primary source, as in a court-conducted program, and a speaker or alternative counsel might wish to connect a second device.

Courtroom 5E uses a single evidence presentation station… equipped with a document camera; DVD/CD/VHS audio-video player; audio cassette player; other audio system connection; digital evidence annotation; and evidence system controls.

The Jury Box

Courtroom 5E includes a wireless microphone system with a hand-held probe microphone mounted on a floor stand in order to provide the court with flexibility…

Finally, the evidence presentation podium provides the ability to print the presented electronic evidence including any annotation.

3-6.4 Display

The evidence presentation station is equipped with a 17 inch LCD monitor to display to counsel material presented by the judge, clerk, witness, or other counsel. This monitor is mounted in such a way to present the smallest degree of sight line blockage possible. This display also serves as a means to annotate electronically presented evidence through its touch panel interface.

3-6.5 Other technology

As previously noted, the evidence presentation station is equipped with a document camera, DVD/CD/VHS audio-video player, and audio cassette player. The document camera includes XGA video output, composite video output, S-video output, and serial and data connections. It can also be used for as a light-table for x-rays and slides.

3-7 THE JURY BOX

3-7.1 In general

The jurors must be able to respond to questions during voir dire, to be heard when speaking to the court, and to be able to hear and see the evidence. In Courtroom 5E, the jury's primary technology needs are microphones, visual displays, and a good courtroom sound reinforcement system. The court can supply assistive technology when necessary.

3-7.2 Microphones and speakers

Courtroom 5E incorporates hanging overhead or "choir" microphones. These are very small microphones suspended from the ceiling. Their size and color allow them to blend in — although they will not be invisible. Hanging microphones will provide the degree of audio coverage necessary, including covering counsel who approach the jury box, but not provide a distraction to the individual jurors who if given desk-based microphones might move or play with them, generating noise and distracting participants from the proceedings.

Low profile wall mounted speaker's are in the front jury rails to provide sound re-enforcement for the jurors. This configuration directs the sound from the direction of the speaker creating a more comfortable situation for the jurors to comprehend the message. This is the same concept as used in churches to direct the listener to the minister.

3-7.3 Computer and other connections

The jurors do not need computers. However, in the event of a English-literate hard-of-hearing juror, the court may provide the juror with the real-time transcript for ADA purposes (with an electrical connection to support a computer).

3-7.4 Displays

The primary display devices for the juror are 17 inch LCD monitors, with one display per every two jurors. Courtroom 5E includes a large screen front projection system. In the new courtrooms it has been determined that such a system is not a critical need.

3-8 THE COURTROOM IN GENERAL; INFRASTRUCTURE

3-8.1 In general

Courtroom 5E consists not only of the technology addressed in the preceding portions of this Section, but also of the technology that applies to the courtroom generally, especially a robust courtroom technology infrastructure. The key to the infrastructure is a raised floor and proper cabling as discussed in Section One.

3-8.2 Microphones, speakers, and other audio equipment

Courtroom 5E includes a wireless microphone system with a hand-held probe microphone mounted on a floor stand in order to provide the court with flexibility to permit alternate evidence presentation locations or to question potential jurors. This system should be a good quality diversity type RF wireless system.

Three distinct speaker configurations are required for proper courtroom audio. Ceiling mounted gallery speakers provide coverage of the spectator area. The courtroom audio system should permit the judge during a sidebar conference to transmit "white noise" to these speakers to help mask sidebar conversation. Although this is a desirable feature to have, past Courtroom 21 experience suggests that the noise ("static") is so off-putting to everyone in the courtroom as to be unlikely to be used. This could be an important protection, however, in some key sidebars in cases of major importance. Control of this zone should be located at the main equipment rack. Jury microphones have already been addressed in 3-7.2. Control of this zone also should be located at the main equipment rack. Millwork box speakers should be located at the judge, witness, attorney, clerk and court reporter positions and have already been discussed. These will provide sound re-enforcement in those areas with minimal feedback. Normally, box speakers are mounted under the desktops with a volume control for the judge, clerk and court reporter positions. Controls for the witness and attorney speakers are normally located at the rack. During a sidebar conference, noise is not sent to these speakers due to their proximity to the conference area.

3-8.3 Computer and other connections

Necessary computer connections have already been discussed in the specific court areas. It should be noted that the key connectivity issues for the courtroom and its infrastructure involve the equipment rack, discussed below.

3-8.4 Displays

In addition to the various displays previously discussed, if the courtroom does not show all evidence on an easily viewed large screen, the courtroom should have gallery displays. These monitors, often two large plasma screens, will provide the public and the media with the ability to view and read the material shown on the evidence displays. This recommendation is somewhat interesting. In traditional trials, members of the public do not have access to the evidence and must normally make do with listening to the proceedings in front of them. However, the adoption of courtroom technology has altered perceptions. Given the ease with which we can display documentary evidence, for example, most people see no reason not to make the display to the public which increasingly seems to feel that it has a "right" to it. It should also be noted that the courtroom can also be used for training and other purposes not necessarily trial related and therefore, the monitors are multi-purpose in the uses they can provide.

3-8.5 OTHER TECHNOLOGY

3-8.5(a) Cameras

Video cameras for remote testimony (videoconferencing) are located throughout the courtroom to allow the person at the far end of a videoconference to view the courtroom. In Courtroom 5E, six cameras are used to cover the judge, witness, defense, plaintiff, podium, and an overview shot of the courtroom. These cameras are color NTSC Pan/Tilt/ Zoom cameras with high speed wide range tilt head, integrated 12x high speed auto focus zoom lens, auto tracking and motion detection, fully controllable remotely via RS 232 or remote IR controller. The cameras are connected to a switcher set to allow video to follow audio. This means that when a person in the courtroom speaks, the camera associated with that position switches and the person at the far end sees, as well as hears, the speaker. The judge's can also control the cameras from the judges control panel.

NTSC Pan/Tilt/Zoom Camera

The overview camera, which shows the majority of the courtroom, is located in the front of the courtroom on the opposite side from the security camera.

3-8.5(b) Assistive listening

Compliance with the American Disabilities Act requires accommodation for people with hearing loss. An infrared hearing assistance system will accomplish this and also can provide a means for foreign language interpretation. Channel one provides composite audio from the audio mixing system. Channel two provides individual language interpretation from the interpreter's connection panel in the courtroom. The system can accommodate up to two additional language interpretations for the gallery. This is important when both parties involved in the litigation are non-English speaking. A standard package includes the Infrared Emitter Panel, a transmitter, at least five headset receivers with rechargeable batteries and a charger unit. Note that real-time transcription is a potential solution for those who cannot hear even with the help of the infrared assistive listening system.

3-8.5(c) Media connections

At present, Courtroom 5E is the courtroom of choice for major news-worthy hearings. It is possible that the media request access to high-profile court proceedings. Should the court choose to assist in this area, Courtroom 5E currently has two broadcast quality cameras feeding into a media room where further connectivity provides a CATV feed to the Massey building. The intent in the future is to provide a connection plate with a signal path that would

Courtroom 5E is the courtroom of choice for major news-worthy hearings.

Courtroom 5E currently has two broadcast quality cameras feeding into a media room where further connectivity provides a CATV feed…

Detention Center Arraignment Room

Audio processing equipment includes all devices necessary to process, reproduce, and distribute audio. These devices form the foundation of all the other systems in the courtroom.

go from this plate to the rack; from the rack to the central equipment room in the courthouse; and from the equipment room to a connection point where media satellite trucks could be parked (often a section of the parking area reserved for this purpose). Because this connection is to the main courtroom control system, it allows the judge to "kill" the audio/video signal when required.

3-8.5(d) Annotation

Counsel or the witness may wish to electronically annotate visually displayed material, especially to clarify testimony concerning a displayed image. This is accomplished by using the touch-sensitive screens in the courtroom. These screens are connected to a video annotation control device, a Boeckeler Instruments Pointmaker, which places a video overlay on top of the video image.

3-8.5(e) The Equipment rack

The equipment rack is located in an equipment closet behind the clerk's area. The configuration of the rack requires adequate space, electrical service, and environmental support (heating/cooling/ventilation) which is not adequate in 5E. Generally, a five foot by eight foot space is recommended. The rack is divided into several distinct areas which include audio processing, video processing, remote video processing, system control and other related system devices.

Audio processing equipment includes all devices necessary to process, reproduce, and distribute audio. These devices form the foundation of all the other systems in the courtroom. The audio processor takes in the signal from the microphones and other audio playback devices. These mixers provide programmable inputs and logic outputs, a built-in white noise generator, and RS-232 control through a touch screen control system. Room equalization and feed-back elimination is included to reduce audio feedback within the speaker system with active filtering, which adjusts to changes in the room without operator assistance. State of the art audio mixers, such as the Biamp Audia Flex, provide for the ability to control audio through the courthouse network eliminating in-courtroom repair calls for system adjustment. This system also represents the core of some of the future capabilities including remote distance interpretation and remote electronic court reporting. Signal amplification is required to feed the speakers. The speaker load governs the size of the amplifier. Normally, 50 to 100 watts for each zone is more than sufficient for a courtroom sound system. One of the court's requests is for an effective way to provide teleconferences. This is accomplished with a telephone interface device connecting the courtroom microphones and speakers to telephone lines, turning the entire courtroom into a "speaker phone." The unit provides echo-cancellation, balanced audio in and out and control through the touch-screen control system.

Similar to the audio equipment, the video processing equipment includes all devices needed for presenting and distributing video signals for evidence presentation and related visual technologies. The central video device is an ultra wideband, analog RGBHV matrix switcher which will switch RGBHV, RGBS, RGsB, component video, S-video, composite video and audio. The matrix switcher is controllable through front control switches and RS-232/422 (through the touch-screen control panels). The matrix switcher requires connection to other devices. A digital video scaler accepts composite, S-video, and component video inputs and outputs the signal as a high resolution XGA video signal. This allows signals from the VCR or other lower resolution devices to be displayed on the courtroom monitors. A need for the reverse also exists. High-resolution video can be sent to a video printer, VCR or remote site by converting the video signal with a scan converter. The scan converter will accept high resolution XGA rate input and output in composite, S-video and component video. Other video devices such as distribution amplifiers are required, but the exact system configuration design will dictate the need for other devices of this kind.

3-8.5(f) Video conferencing

Videoconferencing is used for remote audio/video appearances and communications. The equipment required includes a method for switching cameras and a device to send and receive the audio and video. The cameras can be switched by using a six-input, two-output composite video active switcher with

vertical interval switching. This device is controllable by RS-232 and contact closure switches. This switcher will be used to switch video cameras through a "video follows audio" connection to the microphone mixer and the courtroom control system. The signals from this switch and the audio mixer will then be sent to a central videoconference control rack that is connected to outside communication lines and the other selected courtrooms and support rooms in the courthouse.

3-8.5(g) Control system

Much of the courtroom's technology is subject to touch-screen control via touch panels at the bench, clerk's position, and the evidence presentation station. The interface between the panels and the matrix switcher and other switching equipment is a programmed switching system supplied by Crestron. The system is programmed to mute/black out all audio & video sources; specifically mute the judge's microphone and the jury microphones; adjust audio system volume; adjust witness microphone volume; adjust auxiliary audio volumes; enable a teleconference; start/stop the bench conference system; "publish" (provide) video to the witness display; "publish" video to the jury and plasma displays; provide operational control of all evidence presentation devices, and also provide other controls as directed by the court during programming design meetings. Although these control systems are extraordinarily useful and efficient, their operation depends on software programming. It is imperative that every effort be made during the control system design to ensure that all interested parties clearly convey their needs to the design team. Otherwise, software amendments will be necessary which can cause highly undesirable delay and increase cost.

3-8.5(h) Whiteboard

Court staff has discussed the possibility of including a whiteboard in the courtroom. Subject to sight lines, whiteboards can provide both witnesses and counsel with a valuable means of drawing real-time diagrams and charts, and annotating opening statements and arguments with text points. The staff should decide specifically as to whether a whiteboard is to be included in the courtroom, left for a later addition, or is undesirable. Courtroom 5E experience has indicated that the audio/visual technology is more than sufficient and the white board is less desirable.

3-9 THE DETENTION CENTER ARRAIGNMENT ROOM

3-9.1 In general

The Detention Center Arraignment Room provides the court with remote first appearance and arraignment facilities. The room includes microphone, speakers, a wall-mounted large plasma screen, video camera, and printer. During a hearing the judge in the courtroom is able to directly view and address the defendant in the Detention Center, and the defendant will be able to view and address the judge.

The required audio and video equipment is installed in a secure housing mounted on the wall behind the Detention Center Arraignment Room's bench area.

3-9.2 Microphones and speakers

A microphone for use by the defendant is mounted in a low wall dividing the room. This will allow good microphone proximity to the defendant without allowing an object that can be used as a weapon. Audio box speakers provide audio from the courtroom and interpreter positions with specific location depending on room acoustics and security concerns.

3-9.3 Computers and connections

The defendant will not need nor have access to a computer at this stage of the proceedings.

3-9.4 Display

The goal behind the use of technology for remote first appearances and arraignments is to replicate to the greatest degree possible the human judge-defendant contact that occurs when a defendant appears in person before the judge. To accomplish this, the Detention Center Arraignment Room includes a 50 inch large plasma screen placed immediately behind the bench so that the defendant will see the judge in near lifesize proportions.

3-9.5 Other technology

The Detention Center Arraignment Room includes a video camera to transmit the video image of the defendant to the courtroom. The camera is a color NTSC Pan/Tilt/Zoom camera with high speed wide range tilt head, integrated 12x high speed auto focus zoom lens, auto tracking and motion detection, fully controllable remotely via RS 232 or remote IR controller. The judge's control panel is able to control the camera, allowing the judge to adjust the camera as required and to verify that the defendant is testifying without prompting. The secure enclosure houses all required videoconferencing and related equipment. Because the defendant may need to review and possibly sign documents, two-way document transmission is necessary. This is accomplished by the use of a printer in the arraignment room controlled by the clerk in the courtroom.

4 Section Four — Training and Evaluation

All commentary presented in this section provided by the Center for Legal and Court Technology.

4-1 IN GENERAL

Operation and maintenance of a major technology-enhanced courtroom is a significant matter which requires preplanning and on-going training. Groups in need of training support include technologists, administrators, judges, and lawyers. Each group is addressed separately.

4-2 TRAINING

4-2.1 Technologists

Court technologists are charged with the maintenance, operational support, and upgrading of the courtroom's technologies. The courts have taken precautions and appropriate measures to ensure that those persons responsible for serving as courtroom technologists are clearly so appointed with ***clear lines of authority and responsibility.*** The Fairfax Courts have implemented a Courtroom Technology Office that includes a Director of Courtroom Technology and a Chief Engineer.

A technology-enhanced courtroom's long-term success ultimately depends upon the bar's acceptance and use of the courtroom.

Courtroom technologist training begins with a review of this and all subsequent reports and then continues to formal instruction that includes the courtroom infrastructure, each piece of equipment, maintenance needs, probable technology misuse and its solutions, troubleshooting, and upgrade plans. Critically, this training must address what a courtroom technologist may and may not do to assist counsel in a case.

All Courtroom Technologist are required to, at a minimum, meet the Basic Audio/Visual certification training offered by the Center for Legal and Court Technology. Advanced certifications are also required for higher level staffs.

4-2.2 Administrators

The courts' administrators need at the very least a general orientation and familiarization program that will show and explain the courtroom and demonstrate the courtroom's capabilities. Any administrators with direct responsibility for the courtroom will need additional instruction to ensure that they have a more expansive understanding of the courtroom's administrative and budgetary implications as well as its possible effects on traditional courthouse practice.

Because court administrators are the interface between court operations and both judges and lawyers, it is especially important that key administrators have a detailed understanding of the courtroom's current and future capabilities and probable consequences. One of the chief issues to be determined by the courts' administrators is the upgrade plan for future courtrooms. Absent such a plan, with the budget to support it, Courtroom 5E could become obsolete within a few years and could at any moment become unable to address a newly developed but key technological need.

4-2.3 Judges

To the degree possible, all of the courts' judges will receive optional training to include a familiarization program in the courtroom that demonstrates the courtroom's capabilities. Those judges likely to preside over cases in the courtroom ideally should receive advanced instruction that would cover the legal issues incident to technology-enhanced courtrooms, including evidentiary and procedural challenges; operation of the bench technology; proper lawyer use of technology; coping with lawyer technology mistakes; and other matters of general interest.

4-2.4 Lawyers

A technology-enhanced courtroom's long-term success ultimately depends upon the bar's acceptance and use of the courtroom. This presents the court with a dilemma. The court should eagerly seek to provide familiarization and orientation sessions for the bar, preferably in connection with the Fairfax County Bar Association and other bar groups. However, successful technology use requires detailed hands-on instruction that most members of the legal professions believe it improper for the court to deliver. The court believes it has a responsibility to advise the bar of the courtroom's capabilities and any administrative or legal rules attendant to its use. Traditional trial practice training is outside this scope, although the court may choose to assist in its delivery by a third party.

Both lawyer familiarization and advanced hands-on detailed training is available from the Center for Legal and Court Technology and other third party

affiliations. After initial familiarization orientations are conducted, court staff, perhaps assisted by local members of the bar, should be able to provide periodic short orientation programs for lawyers new to the courtroom.

4-3 Evaluation

Courtroom 5E is continuously evaluated and serves as the blueprint for further courtroom development, renovation, and construction. Evaluation addresses the operation and reliability of individual products, the degree of use of the courtroom for technology and traditional purposes, the degree of use (and the success thereof) of given technologies, the perceptions of all stakeholders, including members of the local bar; identification and discussion of apparent problems, and the courtroom's impact upon the courts' normal policies and procedures. Evaluation also includes the impact of the courtroom's use and maintenance on the personnel of the court and its financial consequences to the courts' budgets. The evaluation process is a continuous process refined by constant feedback.

4-4 DEFINITION "LEGAL TECHNOLOGIST" AND "COURTROOM TECHNOLOGIST"

For the purposes of these Protocols, a "legal technologist" is a person whose courtroom functions include the operation of courtroom technology. A "courtroom technologist" is a member of the court staff or a person employed by or appointed by the court for that purpose who is in some degree directly responsible for the supervision, maintenance, or operation of courtroom technology.

Commentary

Courtroom technology is valueless without competent persons to operate it. Technology operators are at least functionally "legal technologists." A legal technologist may but need not be an attorney. This definition distinguishes a "legal technologist" from a "courtroom technologist."

Courts that have chosen to install or welcome courtroom technology often have technical staff members who are assigned supervisory, maintenance, or operational duties with respect to it. These persons are defined as "courtroom technologists." Counsel seeking to use courtroom technology frequently has formal or informal contact with these important staff members. This definition of "courtroom technologist" ordinarily excludes counsel or third party vendors or technology experts obtained by counsel for their assistance in a case. It may include, however, non-court personnel who have been employed by or appointed by (e.g., the Courtroom 21 Project, which was appointed as Executive Agent for legal technology in Commonwealth v. Malvo) *the court to support or implement the use of courtroom technology.*

4-5 TYPES OF COURTS

4-5.1 *"Prohibitive courts"*

A "prohibitive court" is one that rejects by rule or custom all or nearly all use of courtroom technology.

4-5.2 *"Permissive courts"*

A "permissive court" is one which allows but does not require significant use of courtroom technology.

4-5.3 *"Mandatory courts"*

A "mandatory court" is one which requires the use of one or more forms of courtroom technology.

Commentary

These protocols do not customarily distinguish among the three types of courts specified in their application. They are defined, however, for two primary reasons: the classification may be helpful in describing courts, and because some believe that mandatory courts owe a greater degree of assistance to counsels who have technical difficulties than do other types of courts. Most courts are believed to be permissive. However, anecdotal evidence indicates that some courts are mandatory, at least insofar as presentation of documentary evidence is concerned in large document cases. Although there have been reports of prohibitive courts, none can be said with assurance to actually exist.

4-6 COUNSEL'S DUTY TO THE COURT AND CLIENT

4-6.1 Counsel's duty of competence

Counsel and their agents who use courtroom technology should be competent in doing so. Non-court personnel who assist counsel in the operation of courtroom technology act as counsels' agents and are equally bound by the duty of competence.

Commentary

Whether counsel may sometimes have an ethical duty to use courtroom technology to effectuate their ethical duty to represent the client zealously and competently is a matter not addressed by these Protocols. Counsel does have an obligation to use courtroom technology competently when they

Courtroom technology is valueless without competent persons to operate it.

Counsel does have an obligation to use courtroom technology competently when they attempt to do so.

attempt to do so. Incompetent use of courtroom technology results in wasted court time and, if court staff attempt to assist counsel, possible waste of court resources. Given counsels' position as officers of the Court, such waste should be avoided. Further, given counsels' duty of competent representation to the client and the risk that incompetent use of technology may harm the persuasive nature of counsel's case presentation, counsels' ethical duties to the client also impel a duty of competent use.

Absent Court requirements to the contrary, counsel need not personally operate courtroom technology. They may rely in whole or in part on staff or third party vendors. However counsels' duty to use courtroom technology competently is not affected by the actual operation of that technology by others; those operating the technology act as counsels' agents unless the Court requires that court personnel operate the courtroom technology.

These Protocols do not define "competence," however, leaving to another day a possible set of detailed standards. Competent use of courtroom technology, however, requires that counsel or their agents understand how to use that technology. An inadequate understanding likely will result in either the reality or appearance of a malfunction, usually interrupting trial. Case presentation via a computer, for example, usually requires the operator understands how to connect the visual output of the computer to a display device (or courtroom visual display system). Counsel who fail to properly set a computer's power saving software have a high probability of having the computer suspend its operation unpredictably which may not only interrupt a counsel's case presentation but also lead to the erroneous inference that the system has malfunctioned and that counsel needs a lengthy recess to recover from the perceived problem.

4-6.2 General awareness of customarily used or available courtroom technology and the nature of any Court policies or informal practices concerning its use

Counsel should have a basic familiarity with the general types of courtroom technology applicable to trials of the type to be tried by counsel and the nature of any Court policies or informal practices concerning its use.

Commentary

Proper use of courtroom technology requires that counsel either directly or through the active participation of other knowledgeable persons, understand the types of courtroom technology potentially useful in the litigation. Competence implies more than just the ability to operate given technology adequately; it implies the ability to choose the type of technology to be used to effectuate the goals of the representation. Counsel has no obligation to use technology. At least in the abstract, however, every counsel should be aware of those options which might enrich the presentation of a case. At the very least, counsel who choose to use courtroom technology ought to be able to make an intelligent and reasonable selection among available technological options.

4-6.3 Awareness of available court-supplied technology and the nature of any Court policies or informal practices concerning its use

Counsel should be aware of the nature of any courtroom technology available through the Court and the nature of any Court policies or informal practices concerning its use.

Commentary

Courts are increasingly making courtroom technology available to counsel involved in a hearing or trial before the Court. This technology may exist in the form of installed technology in the courtroom, including fully integrated high-technology courtrooms, wired courtrooms that are augmented in a given case by court supplied cart-based courtroom technology, or via court-owned or controlled courtroom technology that may be made available to counsel. Court supplied technology often is available to counsel at no cost, and its use and operation is understood and perhaps even supported by the Court. In order to make intelligent and reasonable decisions about whether to use courtroom technology, what technology to use, and whether to seek Court consent for counsel to bring into the courtroom non-Court technology, counsel must have an adequate awareness of any courtroom technology that is available from the Court.

In making a decision about the possible use of courtroom technology, counsel must be aware of any Court policies or informal practices concerning its use. This is especially true should the Court be either a prohibitive or mandatory one.

Many courts require counsel to present their case from a single location, often a lectern or podium equipped with courtroom technology. From a trial practice perspective, counsel need to know whether they are free to depart the podium and whether they are able to operate the courtroom technology from other locations (including use of a portable remote control). Many courts have noted that counsel sometimes ask, often with little or no notice, to relocate technology-equipped lecterns or podia. Courts often have policies concerning this with which counsel should be familiar before the trial of the case.

4-6.4 Familiarization with operation of courtroom technology

Counsel should be familiar with the method of operation of any courtroom technology to be used in the trial or hearing and the implications of that operation for the trial or hearing

Commentary

Counsels' duty of zealous representation to the client as well as counsels' status as officers of the court impels the conclusion that counsel should understand the probable impact of the planned use of courtroom technology on the trial of the action. Installed display equipment in some courts may require that the courtroom lights be dimmed or darkened entirely, either of which could negatively affect a counsel's planned presentation of evidence, opening statement, or closing argument.

4-7 SHARED USE OF TECHNOLOGY

4-7.1 In general

Counsel seeking to use courtroom technology in the most cost-efficient fashion ordinarily are best served by joint use of the technology planned for a given trial or hearing and joint use ought to be a Court's normal policy, subject to necessary case-specific exceptions. When non-Court owned or controlled technology is to be used, joint acquisition and use is best effectuated by advance planning and coordination among the parties. However, unless otherwise required by Court rule or order, in non-criminal cases non-Court owned or controlled technology obtained by one party at its own expense need not be shared with other parties, each of whom is responsible for the acquisition, installation, and operation of that party's courtroom technology.

Commentary

Some of the reasons for the installation of high-technology or technology-augmented courtrooms are to provide an equal playing field for all parties, to encourage the use of courtroom technology, to diminish the cost to litigants of obtaining their own courtroom technology, and to avoid the unsightly and potentially unsafe need to wire courtrooms for one-time uses of outside technology. When multiple parties seek to bring their own courtroom technology into a courtroom or hearing room, they frequently create difficulties for the court inasmuch as the parties need time to install the equipment which with its wiring may adversely affect the appearance and the operation of the courtroom. Multiple versions of the same technology substantially complicate the situation and ought to be avoided to the degree possible.

From the client's perspective, sharing courtroom technology may permit a substantial cost savings. Current practice often has counsel presenting their case primarily via the use of one or more notebook computers. Well designed courtroom technology would permit the use of multiple computers either all concurrently attached to a display system or seriatim. In no case should counsel need to share computers with the associated concern about improper access by one party to confidential matters of another.

Courts may wish to require joint use of specified equipment, such as document cameras, which by their nature do not implicate counsel's work product or client confidence concerns.

Although technology sharing is highly desirable and ought to be strongly encouraged, there would appear to be no justification for requiring one party that has obtained courtroom technology at its own expense to make that technology available to other parties of no expense to those parties. Doing so would be unfair and would discourage the responsible use of courtroom technology.

4-7.2 In criminal cases

In criminal cases, courtroom technology used by the prosecution at a trial or during a hearing should be available for the use of indigent defendants or for those defendants the Court determines ought to have such access for financial reasons.

Commentary

Criminal cases are special. The constitutional requirements for due process and fair trials make an uneven playing field especially unacceptable. Accordingly, prosecution use of courtroom technology ought to permit the Court to order the prosecution to make the technology available to an indigent defendant. The Protocol does not require that the prosecution operate the technology or instruct the defense in its use, only that the given technology be made available for defense operation.

Although there is substantial agreement that indigent defendants and their counsel should have access to prosecution technology, the matter is far less clear for defendants who can afford to retain counsel. From one perspective, courtroom technology is simply another defense expense. From the other, there is little justification for burdening the defense with yet another cost (which might make it choose to refrain from acquisition of courtroom technology) which the defendant may not be able to afford. The Protocol allows the Court to take the defendant's financial status into account in deciding whether to allow the defense access to prosecution supplied courtroom technology.

4-8 COMMUNICATION WITH THE COURT

4-8.1 Notice of intent to use technology

Unless otherwise governed by Court rule or practice, counsel intending to use courtroom technology in a given trial or hearing should give notice of that intent in writing to the Court and opposing counsel a reasonable time before the trial or hearing. The notice should include an itemized list of the technology that counsel desire to use and any special requirements dictated by its installation or operation, should it be courtroom technology to be supplied by counsel.

4-8.2 Duty to keep the Court current

Counsel who have given notice of an intent to use courtroom technology in a given trial or hearing should advise the Court (and as appropriate any assigned court reporters) of any material changes in counsel's planned use of courtroom technology. Counsel should affirmatively notify the Court should the case settle, be rescheduled, or if counsel decide not to use courtroom technology.

Commentary

Although the Court ought to have either a rule or standing order setting forth intended courtroom technology use by parties, in the absence of such a formal Court requirement, as officers of the court counsel should take it upon themselves to advise the Court, and opposing counsel, with specificity, of their intent to use courtroom technology. Such advance notice will permit the Court sua sponte to schedule a hearing to discuss the matter should it find counsels' plans

to be problematical. Ordinarily, and subject to Court practices, such notice should be made in written form, whether electronic or otherwise. In major cases and in special circumstances the Court may wish to require, or counsel may wish to submit, such notice in the form of a formal motion.

To avoid a potentially substantial waste of valuable personnel time, counsel should ensure that prior courtroom technology plans that have been communicated to the Court staff are kept current. Court staff, including the court's legal technologists and as appropriate court reporters (who in some jurisdictions may not be court employees), may not be aware of changes in case status. Accordingly, counsel should not assume that because the Court is aware that the case has been discontinued or rescheduled that court staff responsible for dealing with courtroom technology are familiar with those changes. Ordinarily, informal communication ought to be sufficient in the event that a case has been formally discontinued or rescheduled.

4-8.3 Coordination with the Court's technical staff

Subject to Court rule or practice, counsel intending to use courtroom technology at a given trial or hearing should coordinate the planned use with appropriate courtroom technologists, and as appropriate court reporters, a reasonable time before the trial or hearing. Court staff will not assist counsel in their case-specific adversarial efforts.

To the degree possible, when using Court owned or controlled courtroom technology counsel should test any counsel supplied courtroom technology that must connect to the Court's technology a reasonable time before the trial or hearing to ensure the compatibility of the technology. Neither the Court nor the courtroom technologist has a duty to provide or ensure compatibility.

Commentary

An increasing number of courts employ legal technologists to assist the Court in the management and use of courtroom technology. These courtroom technologists usually can speak with technological authority about the compatibility of proposed counsel technology with the Court's own systems and rules. Subject to the Court's preferences, direct technical communication between counsel and the court technologists can be very helpful to obviate otherwise potentially significant technical problems. Checklists prepared by the technical staff may be an appropriate way of assisting counsel and those employed by counsel in this general area.

Counsel should ensure, however, that they do not confuse the technical role of the Court's legal technologists with the distinct roles of judge and court administrator. Counsel should further understand that the court technologists are not to assist counsel in counsels' attempt to win their case, but rather are neutral experts whose job it is to ensure that counsel can function properly within the technological constraints of the given courtroom or hearing room.

Court reporters increasingly provide real-time transcription services, sometimes augmented by concurrent or delayed web transmission or publication. Counsels who anticipate use of such technology should also coordinate with the assigned court reporter.

Because given pieces of equipment, notably some notebook computers and some display devices, are not always compatible, it is essential that counsel field test their equipment a reasonable time before the trial or hearing to ensure compatibility. A "reasonable time" is sufficient time to either correct the incompatibility or to obtain alternative compatible equipment. Ordinarily this requires a compatibility test one or more days in advance of the trial or hearing.

4-9 A COURT'S DUTIES TO COUNSEL

4-9.1 Duty to supply courtroom technology

A court has no duty to supply counsel with courtroom technology.

Commentary

Courtroom technology can substantially decrease trial or hearing time, augment fact-finder memory and understanding, and provide the public with an enhanced understanding of the proceedings. Although these are substantial and desirable matters, no legal authority now exists which compels a court to supply counsel with publicly (Court) financed courtroom technology as a general matter.

4-9.2 Duty to provide information to potential counsel

4-9.3 In general

The Court should supply counsels who are to appear before the Court in trials or hearings with any appropriate information that reasonably could affect counsels' potential use of courtroom technology.

Commentary

Courts ought to give counsel sufficient advance notice of Court policies concerning the potential use of courtroom technology in the Court's trials or hearings so as to permit counsel the opportunity to make intelligent and reasonable decisions about whether counsel should use courtroom technology and, if so, in what manner. Mandatory courts have a special responsibility to advise counsel as far in advance of a relevant trial or hearing of the Court's mandates concerning such use.

4-9.4 Court rules or procedures

4-10 IN GENERAL

The Court should establish and promulgate in appropriate written and electronic form detailed rules or practices concerning the use of courtroom technology trials or hearings before the Court. The Court should in particular set forth any types of courtroom technology that are expressly prohibited or permitted.

The Court should publish for the Bar its position on who is expected or required to operate the courtroom technology. This may include specific notice that third-party vendors or support are welcome, that courtroom space has been dedicated to the

potential operation of equipment by such third parties, or similar rules dealing with third party technology use. If the court has constrained operation to certain categories of individuals or created a training requirement or certification process, this should be included.

The Court should notify counsel clearly as to any costs that are involved in the use or operation of courtroom technology, whether the Court's own or controlled technology or that obtained by counsel.

The Court in jury trials should issue such instructions as may be necessitated by the use of courtroom technology.

Commentary

The use of courtroom technology in trials and hearings is increasingly common. Use of courtroom technology in trials and hearings has "traditionally" been ad hoc, with specific rules or practices often varying depending upon the judge in any given case. This is systematically undesirable as it provides a potentially great variance in trial practice depending upon the identity of the individual trial judge. If a given court cannot establish rules and practices of general application within the jurisdiction of the Court, the Court should attempt to establish consistent rules for any given courthouse. When such is not feasible or desirable, each individual judge should make known in some written form the judge's rules and policies. This is especially important in the modern world when counsel may no longer be local. Web-published rules and practices are especially useful.

In determining whether the Court will permit or require the use of certain types of technology, judges, court managers, and technologists should work together to reach an appropriate result. Court technologists should always be consulted in issues dealing with the potential use of technology.

The issue of who is expected to personally operate courtroom technology is especially important, particularly inasmuch as there can be substantial variation in practice. Some courts permit counsel to operate the technology themselves and to present evidence directly. Others require evidence to be submitted to the court's officers to be displayed by those officers. The court's culture in this direction should be spelled out clearly.

Courts occasionally have special rules concerning demonstrative evidence, particularly as used in traditional opening statements. If these or similar rules are to be applied to high technology trials requiring, for example, exchange in advance of trial or hearing of computer-based images, such matters should be made clear.

Courtroom technology use can create a need or desirability for jury instructions. Courtroom 21 research, for example, indicates a high probability of jury frustration if counsel show documents too rapidly for jurors to read or obscure significant portions of the documents by what are customarily called "call-outs" (enlargements of key portions of text). Counsel should be encouraged by the court to give the jurors sufficient time to read relevant parts of exhibits. However, particularly if the Court wishes to achieve the maximum time savings that may result from the electronic display of evidence, the Court, in those courts to which such an instruction would be applicable, should instruct jurors that counsel will highlight the parts of exhibits counsel feel most important but that the jurors will later be able to read the entirety of an exhibit during jury deliberations.

4-11 COUNSEL'S ABILITY TO DEPART FROM THE COURT'S ESTABLISHED TECHNOLOGY OR CUSTOMS

In setting forth rules or practices concerning courtroom technology, the Court should include any policies and procedures which may prohibit or permit counsel to seek exceptions to those rules or practices.

Commentary

Technology is ever-changing. Any court rules or practices should include the ability for counsel to petition the court by motion for an exception to its normal rules or practices, if only because of the possibility of technological developments which might justify a departure from rules or practices based upon no longer tenable assumptions. Such new developments are distinct, however, from exceptions based solely on counsel preferences.

A court, especially a court with a substantial technology-augmented courtroom, likely will have firmly established expectations for counsel's actual use and operation of courtroom technology. Counsel, however, may have alternative preferences. When the courtroom has installed multiple small display monitors for jurors, for example, counsel have been known to request permission to bring into the courtroom a large screen and projector to use instead of the small screens. Similarly, when counsel are supplied with a technology-equipped lectern or podium, they often seek consent to either present the case electronically from counsel table or other location (often using an assistant or vendor) or to relocate the lectern or podium for opening statement, closing argument, or both. Such requests can be technologically difficult or impossible, especially if made during or immediately before trial. A court that determines based upon its own experience that given types of requests will be rejected should make that fact clear in its published practices.

4-12 Exhibits and court record

When counsel are using courtroom technology, the Court should clearly notify counsel as to the ways in which exhibits will be designated and supplied to the court reporter or other appropriate individual so that all exhibits can be properly identified for appellate purposes. In particular, if technology is to be used to permit annotation of exhibits, the court should make clear whether each annotation becomes a separate sub exhibit designation.

Commentary

The nature of the court record is evolving along with the use of courtroom technology. As we now have the ability to annotate exhibits electronically,

whether for reference later in trial or hearing or for the appellate record, the Court should advise counsel and the court reporter of how to deal with annotations and related material. This may become a moot point as courts move to electronically capture the entire presentation of evidence.

4-13 ORIENTATION AND FAMILIARIZATION

The Court should make known to those lawyers who may appear as counsel in a trial or hearing before it the nature of any courtroom technology installed in its courtrooms and hearing rooms, and any technology owned or controlled by the Court that may be available for counsel's use. The Court should periodically provide counsel an opportunity to physically view and inspect the court's courtroom technology and should make available to counsel court staff able to answer reasonable non-case theory specific inquiries from counsel concerning use or operation of the courtroom technology. Court staff must not engage in what is customarily considered adversarial case theory specific litigation support advice.

Commentary

In the interests of both encouraging courtroom technology use and minimizing waste of court time, a Court should make known to counsel as much information about Court owned or controlled courtroom technology as may be reasonably possible. This may include placing information, including photographs and possibly even operating instructions, on the Court's web site, production of orientation videotapes, CD's, or DVD's, and publication of written materials.

Experience has shown us that counsel who will participate in trials or hearings before the Court can be greatly assisted in their decisions on whether and how to use courtroom technology if the Court periodically opens its courtrooms to counsel for a basic courtroom technology orientation and familiarization session at which the Court's legal technologists can answer specific questions not involving a counsel's efforts to prove the specific facts of his or her case. Because the Court must at all times be impartial, it is imperative that in their efforts to be helpful court staff do not accidentally or otherwise advise counsel on how better to employ courtroom technology to achieve case specific adversarial goals.

Because the Court must at all times be impartial, it is imperative that in their efforts to be helpful court staff do not accidentally or otherwise advise counsel on how better to employ courtroom technology to achieve case specific adversarial goals.

4-14 TRAINING OF COUNSEL

The Court is not responsible for training counsel in the adversarial use of courtroom technology. This ordinarily is the responsibility of counsel and the Bar. Pursuant to its efforts to encourage efficient use of courtroom technology, the Court may support training of the Bar in the use of courtroom technology to include making its courtrooms and courtroom technology available for use in training.

Commentary

Training counsel in trial advocacy is a traditional role of the Bar, albeit one in which judges have frequently assisted in one proper form or another. Trial advocacy instruction carries with it a possibility of judges accidentally being placed in an ex parte role if counsel with active cases before the judges participates in the training. Further, most courts have sufficient financial and personnel resource constraints to suggest that they themselves should be reluctant to offer counsel extensive technology-augmented trial advocacy instruction. Courts, however, have a long recognized interest in encouraging ethical and professional trial practice. Consequently, the Court may wish to assist the efforts of the Bar or third party providers of courtroom technology-augmented trial advocacy instruction. Although this may be done in many ways, one especially effective mechanism may be to permit such instruction to take place in the Court's own courtrooms with the assistance of the courtroom technologists. This has the advantage of furthering the ability of the local Bar to efficiently use the Court's own technology.

4-15 TECHNICAL PROBLEMS

4-15.1 Counsel responsibilities

It is counsel's responsibility and not the Court's to present counsel's case. When counsel experiences a technical problem while using or attempting to use courtroom technology, it is counsel who has the primary responsibility to resolve the problem or to proceed promptly without the use of the problematical technology. This applies equally to the use of Court owned or controlled technology and that supplied by counsel.

Pursuant to their duty of competence, counsel should make every reasonable effort to ensure that counsel will not suffer a technical problem while using courtroom technology in a trial or hearing. It is improper for counsel to intentionally create a technical problem or to simulate the existence of one to curry favor with a fact finder or to prepare a fact finder for the possibility of a later, real, technical difficulty.

To the degree possible, counsel should have backup technology or traditional, non-technological means, ready to ensure that the trial or hearing can proceed should a courtroom technology technical

problem take place that cannot be resolved in a timely fashion.

4-15.2 Court responsibilities

The Court should make every reasonable effort to ensure that Court owned or controlled technology, to include any infrastructure wiring and control systems, is fully functional for a trial or hearing in which it is scheduled to be used by counsel. Should a known problem exist with the Court's courtroom technology, whether consistent or intermittent, appropriate court staff should so advise the judge and appropriate court managers who should as administratively appropriate notify counsel of the problem and any alternative solutions as may be available.

When counsel experience a perceived courtroom technology technical problem that may delay counsel's presentation, counsel should give timely notice to the Court and advise the Court, if possible, of the estimated time necessary to resolve the difficulty. The Court should give counsel a reasonable amount of time to attempt to resolve counsel's problem, subject to the demands of the case and the number and type of problems, if any, previously encountered.

Technical difficulties encountered by counsel in using Court owned or controlled courtroom technology, especially if the Court is a mandatory one, may justify the Court in exercising its discretion to provide counsel with more time with which to attempt to resolve a problem than would otherwise be provided.

The Court may but need not provide court staff to assist counsel in an effort to resolve an apparent technical problem. In a jury trial, the Court may wish to instruct the jurors as to the existence of a technical problem and its consequences along with whatever curative instruction the Court may believe is appropriate.

Commentary

Technical problems incident to the use of courtroom technology can be troublesome. The difficulty is compounded by the fact that it often is very hard to adequately diagnose the problem which can be a result of operator error, software or hardware misuse or incompatibility, infrastructure failure, or device error or failure. A judge faced with an apparent problem has no immediate way of knowing whether the problem is in fact real or just an easily-resolved operator mistake, or whether there may be, for example, a major systemic failure in the Court's own technology. Limited technically able court staff further complicate the judge's ability to determine how best to proceed.

Court technologists should keep court managers and judges advised of potential problems known or expected in the area of the use of the Court's owned or controlled technology or courtroom technology that will be used by counsel. The collective experience has thus been that if a brief amount of time is not sufficient to resolve the problem the trial or hearing must continue; even if that means that the technology is unavailable. Notably, this may not be possible in the event of some forms of technology error. A failure in videoconferencing equipment during remote witness testimony may make it impossible to obtain that testimony that day, and alternative witnesses may not then be available in the courtroom. In a mandatory court in which counsel are using electronic presentation of electronic documents because it was either inefficient or difficult to use the physical documents (if they exist), a technology failure may shut the case down as the physical documents may be unavailable.

There has been some feeling that if a problem is encountered in using the Court's own technology when counsel has been required to use that technology, the Court should be more sympathetic to counsel. In short, a mandatory court may have a higher obligation to counsel than does a permissive court. There is no strong agreement on this, however, and the text provides for that possibility only.

The Protocols consequently place the burden of coping with a technical problem on counsel rather than the Court. This is at least arguably unfair to counsel, at least in cases involving failures of Court equipment. There does not appear to be a meaningful alternative to this at present, however. Accordingly, counsel should have an extensive range of backup options available. Counsel should keep in mind while contingency planning that often courtroom technology permits alternative ways of proceeding. If counsel's computer should fail, for example, but counsel has paper documents and an available document camera, trial can continue using the document camera.

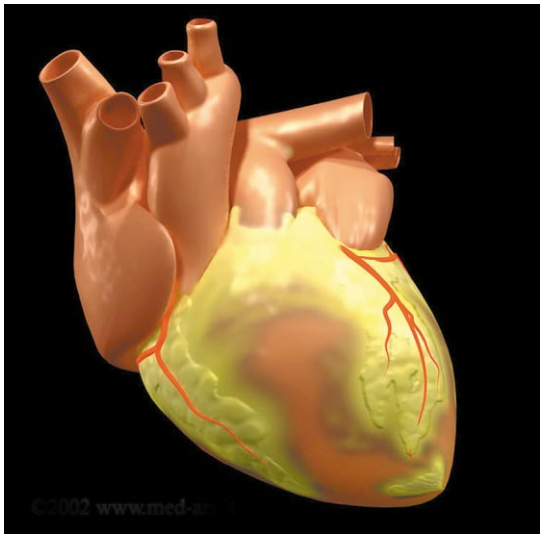
There have been reports that some counsel who fear the possibility of encountering technical problems later in a case simulate such failures at opportune moments reasoning that this will prepare the jury for a more serious, real, failure if one should occur, and may well curry sympathy in jurors. This is improper and is a form of fraud on the court. Judges faced with courtroom technology problems in jury trials may wish to issue curative instructions. Some judges may wish to give a general instruction as part of the prefatory instructions.

…counsel should have backup technology or traditional, non-technological means, ready to ensure that the trial or hearing can proceed should a courtroom technology technical problem take place that cannot be resolved in a timely fashion.

5 Section Five — Highlights

5.1 COURTROOM HIGHLIGHTS

January, 2004 — Courtroom 5E selected to be the "prototype" high-tech courtroom for Circuit Court, General District Court and the Juvenile and Domestic Relations District Court.



3-D Human Heart

April, 2005 — Mallinson vs Doe; allowed the use of Archie MD Legal Graphics. Defense was able to display medical evidence using 3-dimensional digital graphics to explain concepts through animation and images, *Honorable Judge Leslie M. Alden*

February, 2006 — Child Abuse Case, ability to isolate 10 year old witness from the defendant, *Honorable Judge Jane M. Roush*

June, 2006 — Chancery Case, plaintiff from Izmur, Turkey unable to obtain visa to travel to Fairfax, *Honorable Judge Kathleen MacKay*

October, 2006 — Courtroom 5E High-Tech courtroom dedicated in "cable cutting" ceremony. *Congressman Frank Wolf* served as the keynote speaker along with *John Frey, Clerk of the Circuit Court* and *Fredric Lederer, Law Professor and Director of the Courtroom 21 project, College of William and Mary School of Law*.

So as to be present at the ceremony, Professor Lederer conducted his morning law classes in Williamsburg, VA from Courtroom 5E.

January, 2007 — Civil Case, Defendant from Cairo, Egypt able to testify in business partnership dispute case, *Honorable Judge Kathleen MacKay*

January, 2007 — General District Court conducted arraignments via video conferencing capabilities between Courtroom 5E and the Adult Detention Center. General District Court and the Sheriff's now conduct arraignments daily, *Honorable Judge Michael J. Cassidy*.

May, 2007 — Included the electronic display of multiple documents and photos. Judge was able to control which pictures to show the jury while keeping gruesome and intimate pictures from the gallery; including the families of victims, *Honorable Judge Dennis J. Smith*.

June, 2007 — Plaintiff with advanced case of Lou Gehrig's disease and unable to speak. Plaintiff's laptop could produce audible "garbled" sound that was converted to text and displayed to judge, jury, counsel and gallery, *Honorable Judge Randy I. Bellows*.

November, 2007 — Circuit Court conducted arraignments via video conferencing capabilities between Courtroom 5E and the Adult Detention Center, *Honorable Judge Dennis J. Smith.*

February, 2008 — Criminal Case, Prieto murder trial, 85 year old witness physically unable to travel provides testimony via video conference from Berkeley, California, *Honorable Judge Randy I. Bellows.*

5.5 COURTROOM TECHNOLOGY OFFICE

Recognizing the need to consolidate and share valuable resources amongst three Courts; *Circuit Court, General District Court, Juvenile and Domestic Relations District Court* and the Fairfax County Executive supporting agencies; *Department of Information Technology and Department of Cable, Communications and Consumer Protection*, a Courtroom Technology Office was created. The Courtroom Technology Office (CrTO) will ensure that all judges, support staff and administrative personnel of the 19th Judicial Circuit have complete and reliable access to the information they need and the technological support required for high-tech trials and proceedings. Courtroom Technology must be closely aligned with state and local agencies to facilitate the flow of information to the Court system and to broaden the spectrum of information sources available to the Courts. The CrTO is managed by a Courtroom Technology Officer under the direction of the Chief Judge and the Clerk of the Court. Support staff includes highly-trained courtroom technologist and technical staff from the three Courts.

The goal of the CrTO is to provide management and technical information services in a prompt, accurate and efficient manner where appropriate for the judiciary to achieve its goals. An area of high priority is the completion of 17 new courtrooms and renovations of 26 existing courtrooms. In the delivery of information services there is an ever present tradeoff between being responsive and being responsible. The objective is to maintain the flexibility to be responsive, but within the limits implied and explicit responsibilities and budgetary constraints. The overall themes of CrTO's goals and objectives are customer service, cost containment, improved productivity and greater competence. The CrTO is authorized to support court information processing requirements that are consistent with the Judiciary's objectives.

The Courtroom Technology Office (CrTO) will ensure that all judges, support staff and administrative personnel of the 19th Judicial Circuit have complete and reliable access to the information they need and the technological support required for high-tech trials and proceedings.

CrTO's responsibilities include:

- ✔ *Strategic planning for effective use of the court's information resource.*
- ✔ *Liaison with County Department of Information Technology and Supreme Court Office of Technology.*
- ✔ *Project Manager for completion of Courthouse technology roll-out and implementation.*
- ✔ *Acting as an advisor/consultant throughout the Judiciary on computer/information systems-related matters.*
- ✔ *Providing oversight and facilitating improvement of operations through system enhancements or new system development.*
- ✔ *Developing the technical needs of the judiciary through the implementation of new technologies such as video conferencing, wireless networking, and video streaming.*
- ✔ *Development, implementation, and enforcement of standards and procedures relating to computer/information processing.*
- ✔ *Recommending computer/information services related policy for top management and/or Policy committee approval.*
- ✔ *Serving as support staff to the Judiciary and affiliated organizations.*
- ✔ *Evaluating and selecting hardware/software and serving as the primary vendor contact.*
- ✔ *Maintaining state-of-the-art expertise on the technology and informing user groups of how the technology can be applied to enhance operational effectiveness.*

5.5 COURTROOM TECHNOLOGY GOVERNANCE STRUCTURE

Courtroom Technology Executive Governance Board

Primary function: Sponsors courtroom technology initiatives, review and endorse policies and procedures, provide oversight, direction and act as the final arbiter as required. If consensus cannot be achieved and a vote is required, the Chief Judge or Judge designee of each court and one additional Court designee identified within the structure of the Governance Board will represent the voting forum.

Composed of:
- *Chief Judge or Judge designee of each court*
- *Clerk of Court or Clerk designee of each court*
- *Agency Directors — Juvenile Court Services Director and County Chief Technology Officer (CTO)*

The Director CrTO is designated Administrator for the Board

Courtroom Technology Office

Primary Function: Ensures effective strategic planning, development and integration of courtroom technology resources and programs with the courts and other agencies and entities. Manages, monitors, supports and maintains the infrastructure, equipment and software applications in the Fairfax courtrooms. Administers the decisions made by the Governance Board.

Composed of:
1) *Director, Courtroom Technology*
2) *Chief Engineer, Courtroom Technology*
3) *Courtroom Technology Specialist*

Courtroom Technology Team

Stakeholder Committee

Primary function: Identify, research and recommend solutions to meet courtroom technology requirements.

Composed of:
- *Director, Courtroom Technology (CrTO)*
- *CC IT representative*
- *JDRDC IT representative*
- *GDC IT representative*
- *Business representative from each court*
- *Other IT representatives as required (Sheriff, DCCCP, DIT, etc)*
- *Other non-court representatives as required (Public Works, FMD, etc)*

Other functions:
- *Provide business and technical expertise on courtroom functions and technology*
- *Research products and software*
- *Resolve functional problems and recommend solutions*
- *Evaluate current and new technology*
- *Assists with public relations functions for special projects*
- *Assist internal and external users*
- Implement technologies

Requirements: Meet regularly

Courtroom Technology

Planning and Policy Team

Primary function: Act as the primary administrative/business resource, recommend initiatives and link the technology groups and the executive steering committee.

Composed of:
- *Director, Courtroom Technology (CrTO)*
- *Representative from CC, JDRDC, and GDC*

Other functions:
- *Participate in budget development*
- *Consult on business issues*
- *Review and evaluate operational and functional strategies and procedures*
- *Elevate policies, procedures and other issues to the Courtroom Technology Executive/Steering Committee for endorsement, decision, or direction*
- *Provide continuous communication between the stakeholders*

Requirements: Meet regularly

Fairfax County Courthouse

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EQUAL ACCESS/SPECIAL ACCOMMODATIONS

The Fairfax County Courthouse is committed to equal access in all programs and services. Special accommodations will be provided upon request. Please call the ADA/Access coordinator at 703-246-4111, at least 10 working days in advance of the date services are needed.

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www.fairfaxcounty.gov/courts/ada.htm

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