

US LIBRARY UPGRADES BOARDROOM AV

BY JIM STOKES

The world's largest medical library, the National Library of Medicine, adds integrated systems.



The conference table features panels that allow users to plug in their laptop computers, which can feed signals to the video projector. The operator can control the boardroom's Lutron window shades and light-dimming system, ranging from sunscreen to total blackout.

The world's largest medical library—the US National Library of Medicine (NLM) in Bethesda MD—has upgraded its boardroom AV system. It's the first major equipment update in the 30x40-foot boardroom since the initial AV install around 10 years ago.

Major upgrades include speech reinforcement, laptop AV, integration into the medical campus network (LAN), 5.1 surround sound and integration of interactive touchscreen/DVD into boardroom presentations. Robert Slye Electronics, Arlington VA, which did the initial design/build, did the upgrade.

Before launching into the upgrade, here's some background: Jim Main is chief, Audio-visual Program Development Branch of the

NLM, which is within the Lister Hill Center for Biomedical Communications. In turn, NLM is part of the National Institutes of Health.

Main noted that his branch is involved with the research and development section within the library. The library is not just a collection of books and journals but, rather, offers two large online services. Notably, those services are MEDLINE, the online data base of worldwide medical bibliographical information that is oriented toward healthcare professionals; MEDLINEplus is an online health-information service for the patient/consumer.

With that library electronics background in mind, Main pointed out that the board-

Jim Stokes has been involved in the AV industry for more than 30 years and is a Sound & Communications Contributing Editor.

room upgrade was needed to do high-tech presentations. People traditionally think of a boardroom as a place where people sit around a table and listen to other people talk. "In our case, many times there will be computer presentations with PowerPoint being one of the big ones, which are projected on a large screen with a video projector. The presentations can be [accessed] from the podium as well as from the boardroom table. And as part of the installation, computer outlets were put into the boardroom table, so we can [access] our LAN [medical campus network]. We're also using DVD as the platform for delivering interactive educational materials with full surround sound."

The AV Upgrade

Robert Slye Electronics did the AV upgrade, which included integration of existing equipment, all of which will be covered here. Slye's vice president of marketing Bill Beecher was also the system designer; other Slye personnel involved included Greg McManus, Greg Kelly, Jason Moore and Steve Slye.

In addition to the upgrade discussion by NLM's Jim Main, Beecher added that currently updated audio will be followed later by a video upgrade. He added that upgrading to the new AMX NetLinx control system gave the capability of not only controlling equipment from the boardroom, but also "eventually tying into a network and controlling a room from a central location or from an office without having to run over to the room when you want to set up a meeting."

Regarding equipment choices, Beecher pointed out that "we pick all the products. We're not really a catalog house. We pick products because we think they're the best there is to use. Specifically, products such as Gentner, Extron, Crown, JBL and AMX—we've had good luck with all of those. We use them in just about every system that we build and design/build."

AV Control

All elements in the AV install are controlled via an AMX control system, which has been upgraded to the NetLinx. As mentioned, Beecher noted that the NetLinx system has the capability of being able to tie in over the network eventually and control the boardroom from other locations on the National Library of Medicine campus.



From the back of the room, the operator controls the camera for taping meetings or broadcasting the signal over the house RF system.

At present, a newly added AXT-CA10 touchpanel allows an operator to have total control from the back of the boardroom. In addition, several other existing AMX control devices that are compatible with the updated NetLinx include another AXT-CA10 that plugs in a the boardroom table, a TXC32+ wireless panel and a smaller TXC16 that can be used by the NLM director. "If he's there having a meeting, he can use the smaller, handheld TXC16 to switch slides or similar tasks," explained Beecher.

In addition to the AV functions, the AMX controls the boardroom's existing 18 Lutron window shades and light-dimming system.

Speech Reinforcement

The boardroom has separate audio systems for speech reinforcement and surround sound. In the upgraded speech-reinforcement system, microphones are fed to two Gentner XAP800 audio processors that are linked together as one unit for audio teleconferencing. At the boardroom table, sources include six Audio-Technica AT845R boundary mics. The omnidirectional pattern allows participants some movement while seated without drifting off mic. Two Shure UHF wireless systems—a lavalier and a handheld—provide the flexibility of moving around the room during a presentation. The lectern has a dedicated Audio-Technica AT Series mic with an Astatic shockmount. Rounding out the microphone upgrades is a Shure desktop push-to-talk mic in the projection/control room, which allows the control-room operator to talk to people in the boardroom. Further ensuring full, even

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pickup of speech throughout the boardroom are two existing Crown Pressure Zone ceiling-mounted mics.

The common output signal of the two linked Gentners is fed to a Shure DFR-11EQ equalizer, which optimizes the intelligibility of the sound-reinforcement system. The EQ output feeds a Crown CT210 power amplifier, which drives four JBL 2142H recessed ceiling-mounted speakers. During audio teleconferencing, a Gentner telephone hybrid linked to the Gentner audio processors feeds the telephone line.

Manual Override

Beecher noted that, although there are mics on the table and in the ceiling, the human factor still affects optimum speech pickup. "Even with that combination of mics in the room, in this totally automatic system, if people don't talk loud enough and don't have the microphone right in front of them, it just won't pick them up. So the library wanted to have the capability of being in automatic mode or be able to manually override it. For override, an operator can hook up a laptop in the control room, put up a bar chart representing individual mic levels on the laptop, and have control of the input levels. The new Gentner XAP800 allows all the input levels to be controlled manually."

Audio quality of boardroom presentations has been enhanced greatly with the addition of a Yamaha RX-V1000 tuner/amplifier providing 5.1 surround-sound capability. A line output from the Gentner audio processors running through an Extron Ma-

trix 50 switcher also feeds the Yamaha receiver. Via the Yamaha's power amplifier, four JBL Control 25AV speakers in a screen front L/C/R and left/right rear configuration, along with a front-of-room Tannoy PS110B subwoofer, provide surround sound listening.

Surround Sound

Setting up the boardroom surround sound turned out to be a challenge with an opportunity for innovation. "It's kind of a unique environment," related Beecher. "That particular Yamaha tuner/amplifier [RX-V1000] has the capability of setting the levels

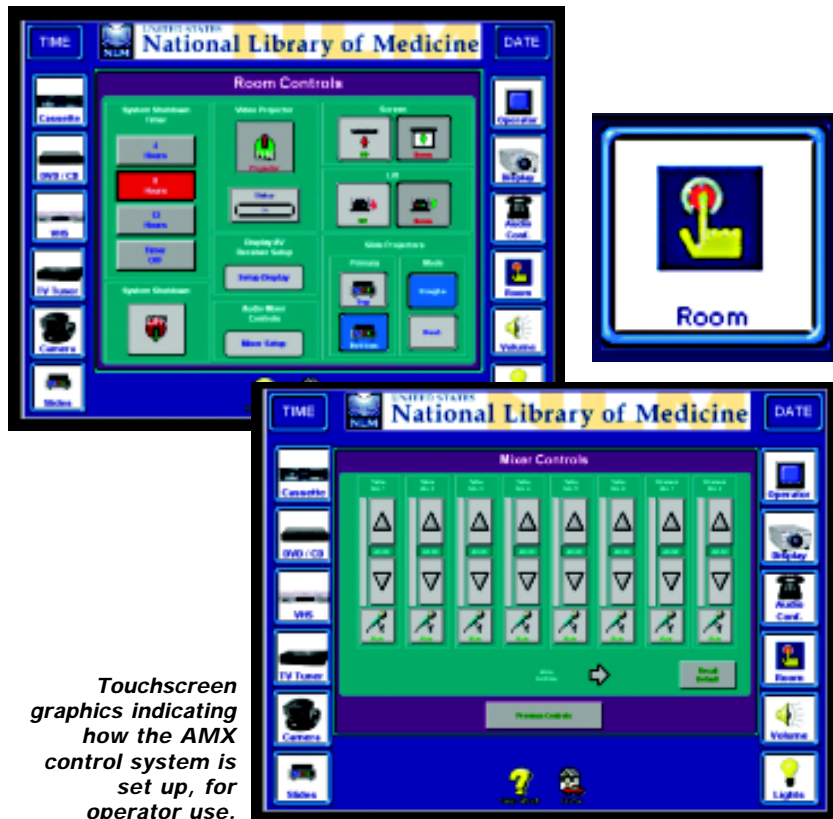
Equipment

- 1 AMX AXT-CA10 color active touchpanel
- 1 AMX AXB-PT10 pan/tilt/zoom
- 1 AMX AXR-NWS 2-way NetWave server
- 1 AMX NXI-ME integrated controller
- 1 AMX TXC32+ wireless control transmitter*
- 1 AMX TXC16 wireless control transmitter*
- 1 AMX AXR-RF wireless receiver
- 1 Astatic GSM-1 shock mount
- 1 Audio-Technica AT915QMRx/H mic (lectern)
- 6 Audio-Technica AT845R boundary omnidirectional table mics
- 1 Contemporary Research 232-STA TV tuner/demodulator
- 1 Crown CT210 amp
- 2 Crown PZM-11 mics*
- 1 Da-Lite Boardroom Electrol 60x60" projector screen
- 1 Display Devices video projector lift*
- 1 Extron Matrix 50 12x8 video/stereo audio switcher
- 13 Extron RGB150XI interfaces
- 1 Extron Crosspoint 168HVA switcher
- 2 Gentner XAP800 audio processors
- 1 Gentner XAPTH1 telephone hybrid
- Gepeco cabling
- 1 Hitachi HV-C10 CCD camera*
- 4 JBL 2142H 12' co-axial speakers
- 5 JBL Control 25AV speakers w/ceiling mounts
- 2 JVC TM-900SU 9" color monitors*
- 1 MagicBox AVC 100 video messaging system
- 1 Middle Atlantic WRK rack w/power strips
- 2 Marantz PMD-510 dual-cassette decks
- 1 Olson OTM-3000 RF modulator*
- 1 Panasonic AG-1980 videotape recorder*
- 1 Pioneer DVD-V7400 DVD player
- 1 Samsung 150MP 15" flat-screen display
- 1 Shure DFR-11EQ EQ
- 2 Shure U124-M/58 UHF wireless mic systems
- 1 Shure WL183 mic
- 1 Shure MX412D/S desktop push to talk mic
- 1 Sigma BSG-26N black burst generator
- 1 Sony DXC-537 camera*
- 1 Sony VPL-FE100U video projector*
- 2 Surgex 115RT power panels
- 1 Tannoy PS110B subwoofer
- 1 Videotek VTM-100 signal monitor*
- West Penn cabling
- 1 Xantech Dinky Link 480B-30 IR receiver
- 1 Xantech Dinky Link CB 12 connecting block
- 1 Xantech Dinky Link 282-00 emitter
- 1 Yamaha RX-V1000 tuner/amp

* existing



The Middle Atlantic rack is positioned so the operator has easy access to the AV controls as needed during presentations.



Touchscreen graphics indicating how the AMX control system is set up, for operator use.

for each individual room speaker to match the characteristics of the room, so you can go to each surround speaker to set up how it sounds best using test signals.

“In order to hear the test signals and set up the surround sound speakers properly, you need Yamaha’s own handheld IR remote control—and you need to be in the room. Because the tuner is located back in the control room, the IR remote control won’t work.

“We used the [Xantech] Dinky Link IR transmitter and receiver. We put the transmitter up in front of the boardroom by the screen and fed the cable back to the Yamaha receiver in the control room. Then we could use the Yamaha remote for setup purposes.”

Beecher also noted that a Sigma black burst generator was used to set up the surround sound. The Yamaha RX-V1000 superimposes all the setup parameters on video, which can be viewed on the boardroom screen. “We took the black burst generator and fed it into the Yamaha,” he explained. “That gives you a video reference, so the audio parameters can be put up on the projection screen.”

Video Sources

Boardroom video sources include two existing video cameras. “[NLM] strives for close to broadcast quality,” pointed out Beecher. An existing Hitachi 3-CCD camera located in the back of the room is AMX controlled, conveniently, via the new addition of an AMX AXB-PT10 accessory pan/tilt/zoom control. To get an overall room view, a manually operated Sony three-chip video camera can be set up in the projection room. Giving a view through the control-room glass, the camera can be put on a tripod or placed on a table.

The control-room operator can view both cameras through existing JVC color monitors. Video and audio are switched by a Matrix 50. Although the two video cameras are switched via the Matrix 50, other AV devices can be switched as well. They include an existing Panasonic VHS VCR, two new Marantz PMD-510 dual-cassette decks and a new Pioneer DVD-V7400 DVD player.

DVD with 5.1 Sound

NLM’s Jim Main gives an example

Robert Slye Electronics

Robert Slye Electronics, Arlington VA, is a full-service technologies company providing integrated systems design, programming, equipment, installation, documentation and service of audio, video, multimedia presentations, teleconferencing, broad-band distribution, local/wide area computer networks and user friendly control systems.

Slye's service expertise includes command and control centers, teleconferencing facilities, executive briefing centers, conference rooms, demo rooms, production studios, boardrooms, and auditoriums. In addition to government-related projects, the technologies company works with major corporations in the area. Their services are also provided nationally and internationally.

of how a high-tech presentation makes use of the upgraded system: "Right now, we're utilizing DVD as the platform for delivering interactive educational materials. One of the projects we've done most recently has been a DVD on asthma."

He noted that the original presentation, up for about 18 months, was a major walkthrough exhibition in the main entrance and rotunda of the library. Although it was replaced with a new exhibition, Main's Audio Program Development Branch created a "virtual tour" of the asthma exhibition in 3D animation.

"You walk through the front door and select any of the cases involved in the original physical exhibition. You can touch any of the objects in an interactive touchscreen to get additional information about those cases." Main pointed out that the DVD has 5.1 surround sound as well.

The DVD asthma presentation is versatile in that it can be shown two ways. It can be taken into the board-

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room and shown as an interactive touchscreen, where it can be inputted into the boardroom AV system with full 5.1 surround sound. In addition, the same DVD can be played back on a laptop computer that has a DVD drive. For that use, it would be mouse-controlled rather than touchscreen controlled.

Messaging System

Also in the update, there's a Magic Box video messaging system that ties into the Matrix 50. Using a PC, messages can be generated and distributed via the campus video network. "It's used primarily for information such as 'the meeting is adjourned and will reconvene in 15 minutes'," said Beecher. Tying in the message system, the boardroom has a Contemporary Research

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TV tuner/demodulator for playing the house system through the switcher. Furthermore, the output of the switcher goes through an existing Olson RF modulator. "That gives the capability of taking any of the video or audio sources generated in the boardroom and putting them on the house RF system, so anyone on campus can tune in."

Video is switched by the Matrix 50 and fed to an existing Sony LCD projector that's on a Display Devices ceiling-mounted projector lift. Images are viewed on an existing large Da-Lite projection

screen. The switcher also feeds the aforementioned Panasonic VCR's record input, so meetings in the room can be recorded.

In the projection/control room, the operator can now monitor the Sony projector's switchable video and computer inputs via a Samsung 15-inch flat-screen display. The operator also has a Videotek signal monitor for setup.

Viewing Laptop Video

In fulfilling the requirement of having laptop computers feed the system, there are six

separate laptop locations at the boardroom table. The laptop signals connect to existing Extron RGB150XI interfaces, which include a newly added interface. The ensuing RGBHV interface outputs feed a new Extron Crosspoint 168HVA switcher, which outputs to the Sony LCD ceiling projector.

How's Business?

Commenting on the business outlook in the Washington DC area where Robert Slye Electronics is headquartered, Beecher observed, "We're pretty fortunate. We haven't felt much of an industry slowdown at all. The government is here, and much of what happens around Washington depends on the government." ■

CSI SPECS

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behalf of the IBEW (International Brotherhood of Electrical Workers).

So What's the Outcome?

As the old epigram denotes, "be careful what you wish for, it may come to be reality." The rise of changes in the established order likely will be accompanied by some degree of chaos and confusion.

Based on reports emanating from the CSI Task Force Committee, it would appear that the scope of work relating to sound and communications and life-safety activities will receive a recommendation for establishment of at least two new and distinct divisions. The committee's advance notification was some-

The establishment of further distinct CSI divisions may necessitate that consultants and designers re-establish their firms or engage registered professionals engineers to meet these new dictates.

what non-descriptive regarding how future handling of computer-data related subjects might be incorporated.

As audio, video, computer and other yet-to-be-foreseen technologies impact our industry, how can such diverse but inter-related pursuits be integrated into a cohesive whole? Are we faced with flipping between distinct (but related) specifications sections and their related sets of drawings?

Several elements of the low-voltage industry are regaling at the sighting of this impending distinction and the subsequent demise of subordination to Division 16, and are heralding the dawn of a new age in specification procedures.

While the prime consideration of low-voltage contractors is drawn to the aspects of Division 16, how are the purports of Divisions 11 and 14 to be similarly accommodated? These cer-

tainly are items that will require additional consideration.

Another interesting consideration is the situation that many acoustical consultants may face. Few of the many of my acquaintance are, or have on staff, registered professional engineers. Almost universally, all construction documents must be "stamped" by a registered engineer in the state (province) where the project is sited. The establishment of further distinct CSI divisions may necessitate that consultants and designers re-establish their firms or engage registered professionals engineers to meet these new dictates.

Is this the End? Not necessarily. As they use to say on radio: Stay tuned for future developments. ■