



## CableNET™ '96 Has Major Virtual Reality Web Presence

**C**an't make it to the CableNET™ '96 demonstration at the Western Cable Show? This year you can visit the site through the World Wide Web.

CableLabs has built a virtual representation of the booth on its CableNET™ '96 Web site. Using VRML (virtual reality modeling language) 2.0, CableLabs Senior Internet Editor Lyne Yohe has recreated the booth in cyberspace, allowing a visitor to navigate through the 6,000 square feet of display area.

Each of the participating vendors has a pedestal in the virtual booth. Clicking on a pedestal jumps the visitor to the Applications to Go (application fact sheet) for that vendor's demonstration, which in turn has a link to the vendor's Web site. The booth's information desk has clickable areas that lead the visitor to an introduction to CableNET™ '96, to a two-dimensional map of the booth, to a list of participating vendors (linked to their application fact sheets), and to daily updates from the Western Show.

CableLabs built the site using Silicon Graphics' new Cosmo™ suite of Web tools. Cosmo™Worlds was used to build the 3D virtual booth, and Cosmo™Create was used to create the remaining HTML Web pages. The site is best viewed using the Netscape browser or Microsoft's Internet Explorer with SGI's Cos-

mo™Player plug-in (currently available for Windows95 and WindowsNT) or a comparable 3D viewer plug-in.

For those Web visitors without a 3D viewer plug-in, the site is also accessible through HTML. A clickable image map of the infor-

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mation desk allows visitors to access all the areas of the booth. You can view a 2D map, get basic information about CableNET™ '96, get the latest updates from the show floor, and view each participants' Applications to Go sheet.

The CableNET™ '96 Web site launches on December 11, 1996 at <http://www.cablenet.org/CN96/>.

### **CABLE NET™ '96**

For those who do attend the demonstration live, CableNET™ is

meant to serve as a physical classroom/laboratory on technology with an educational focus, not marketing, said Mike Schwartz, CableLabs senior vice president, communications. Many of the demonstrations are expected to be available for field trial or commercial deployment within the next year or so, he said.

CableNET™ '96 is co-sponsored by CableLabs and the California Cable Television Association (CCTA). It has 6,000 square feet, 20% more than in 1995, and features 36 exhibitors demonstrating and explaining products, services and hardware that are working on a hybrid fiber/coax network. There are more than 70 pedestals connected to the network.

The exhibit reflects the emergence of high-speed data, telephony and other digital services out of the lab and into commercial roll-outs, said Peggy Keegan, CCTA vice president of public affairs, noting that there are more than a dozen companies exhibiting cable modem technology in CableNET™ '96, about double from CableNET™ '95. C. J. Hirschfield, CCTA vice president of industry affairs, also played a key role in coordinating and facilitating the demonstration.

The exhibit provides CableLabs technical staff with hands-on exposure to a lot of new technol-

See CABLENET page 2

## FOCUS from page 1

ogy—some of it from companies that aren't traditional vendors to cable, Schwartz said: "This is a benefit to our technology tracking initiative of aggressively seeking out new technologies that may be prime for transfer to our member companies."

Another key difference from the CableNET™ '95 demo is the inclusion of network-management products—tools that monitor real-time performance of devices on the network.

The approximately 70 working demos fall into five application groups. Rather than segregate the groups, organizers chose to intermix them but make them easily recognizable via color-coded banners. The five categories:

- Network/Customer Management.
- Cable Modem Technology.
- Internet Technology.
- Entertainment, Education and Content.
- Telephony.

CableLabs will position several high-speed modem "Surf Stations" around the exhibit floor, Schwartz said.

Bay Networks' LANcity Cable Modem Division and Century Communications, the Anaheim cable operator, are collaborating to connect several Anaheim-area schools with the CableNET™ booth, bringing to them high-speed Internet service via cable modems.

## TECHNICAL TEAM

A CableLabs team lead by Frank Wimler, supervisor of technical services, and David Scholze, Internet technologist, worked with vendors since mid-summer to create the exhibit and to integrate the companies' demos into the

CableNET™ system. CableLabs once again hired a project manager from EDS, this year Derek Rains.

Century Communications hosted CableNET™ integration at its Anaheim headend. Final assembly of the network begins the Friday before the show in Anaheim. Live video feeds from the Century headend will pass through an existing fiber plant to the convention center.

The Internet traffic enters Century's headend through 2 T1 lines and is passed through a Bay Networks router located at Century. This traffic is then sent through a 10-mile asynchronous transfer mode (ATM) fiber link to a second Bay router at the convention center.

The on-site servers are Sun Microsystems Ultra workstations. Data transport within the exhibit will be at 10 Mbps. More than 77 miles of fiber optics went into the installation, according to CableLabs.

In addition to all the companies demonstrating on pedestals, 10 companies also provided enabling technology. These companies were Alpha Technologies, AMP, Bay Networks, Belden Wire & Cable, Comm/Scope, General Instrument, Gilbert Engineering, Hewlett-Packard, Bay Networks' LANcity Cable Modem Division and Philips Broadband Networks. A list of the companies demonstrating at CableNET™ follows:

- **@Home** is providing a high-speed, end-to-end network solution for full Internet access.
- **ADC Telecommunications** is demonstrating standard and enhanced telephony services, multiple levels of high-speed data delivery, tailored to varied market niches, and analog and digital video services. Services

are delivered over a single platform that allows for efficient management and use of the spectrum.

- **Bay Networks** applies its experience in data networking technology to deliver next generation data over cable. Together with CableLabs, Bay Networks provides Internet connectivity to the CableNET™ booth.
- **Bay Networks' LANcity Cable Modem Division** is demonstrating data access over cable. High resolution graphic medical files, interactive gaming and multimedia data access are three of the ways LANcity cable modems provide users with high-speed access to large bandwidth data.
- **CableData** is demonstrating a cable modem interface with a Java-developed graphical user interface Web page to perform business office transactions.
- **Com21/3COM** are demonstrating interactive multimedia applications, Internet access of Web sites with audio and video dimensions.
- **Convergence Systems, Inc. and Advanced Modular Solutions** are presenting a headend computer solution designed specifically for the cable industry. The computer operates on all software platforms at high speeds while taking up little headend space, and will run both Internet and Intranet with a firewall in between.
- **Digital Equipment Corp.** is showing a cable digital advertising insertion network management software product.
- **First Pacific Network** is showing its system for delivering telephone and data service

See CABLENET page 3

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CableLabs is a non-profit, research & development consortium founded in 1988 to enable the cable television industry to use technology to improve its business. CableLabs members serve more than 85% of U.S. cable subscribers, more than 70% of Canadian cable subscribers and 10% of the subscribers in Mexico.

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over the cable network.

- **General Instrument** is demonstrating its dual mode 256 / 64 QAM MPEG II digital set-top system and will be showing its SURFboard™ high-speed cable modem system, for cable operators to use in delivering Internet and multimedia services.
- **Hayes** is demonstrating streaming video over the Internet using a one-way cable modem with a telephony return
- **Hewlett-Packard** is offering high-speed Internet access services and a data network operations management system.
- **Headend in the Sky™ (HITS)** is delivering digitally compressed video.
- **Hybrid Networks, Inc.** is demonstrating high-speed broadband and wireless Internet access for telecommuters, small businesses, educational facilities and access at home. Products offer high-speed access to data and multimedia sites using video, audio, high-quality graphics, and animation.
- **Harmonic Lightwaves** is exhibiting complete network management from headend to node and element manager to network manager.
- **Integration Technologies, Objective Systems Integrators**, and **AM Communications** are demonstrating an integrated, end-to-end network management system.
- **Intel** is showing installation and network management software utilities that may be used to install, connect and troubleshoot any brand cable modem in less than 15 minutes.
- **Jones CyberSolutions** is demonstrating a customer management system.
- **Lucent Technologies** is providing a compressed packet voice & music system that works over cable networks and a platform

for delivering integrated voice, data and digital video.

- **Microsoft** is demonstrating a family of servers and client software designed to provide cable operators with the technologies necessary to provide services to communities of users on both the Internet as well as Intranets. The software platform enables cable operators to cost effectively address the Internet market.
- **Motorola** is demonstrating its cable-based telephony and high-speed data service over the hybrid fiber/coax platform.
- **NEC America, Inc.** will feature simultaneous multimedia video services and data services delivered via a cable network to a PC using a cable modem.
- **Network Computer, Inc.** (an Oracle company) will demonstrate access to personalized information on the network computer using NC Smartcard using the HFC system.
- **Phasecom, Inc.** is using cable modem technology to demonstrate various broadband interactive applications such as video-conferencing, high-speed Internet access and telephony; all over cable networks.
- **Power TV**, a subsidiary of Scientific-Atlanta, is demonstrating its operating system and a user interface that is used on the Scientific-Atlanta digital video set-top box, and will include an application for a Web browser on the set-top.
- **Racal Data Group** is demonstrating how traditional telephone and video may be integrated with networked interactive data services.
- **Superior Electronics Group, Inc.** is showing a broadband network monitoring and performance analysis system for network management. In addition, software integration with Arrowsmith & IGS will demonstrate how network faults may be tracked through resolution.

- **SkyConnect/AdVergence** is exhibiting a streamlined way for buying, selling and fulfilling ads on local cable and the World Wide Web.
- **Terayon Corp.** is demonstrating an advanced, two-way cable modem system with robust upstream capability, based on spread spectrum S-CDMA (synchronous code division multiple access) technology.
- **Thomson Sun Interactive, LLC** is demonstrating a Web browser application, running on a standard OpenTV set-top and TV, coupled with an Internet gateway suitable for deployment by network operators at their headend.
- **VideoActive Technologies Corp.** is demonstrating an instant-access near-video-on-demand (NVOD) system that features hundreds of low-cost streams, broad operational flexibility, and fail-safe reliability for cable operators to provide a competitive movies-on-demand service.
- **WorldGate Communications**, through its TV On-Line services, is offering universal consumer access to the Internet via television sets, using existing cable set-top converters, without the need for a personal computer, high-speed modem or video spectrum.
- **Your Choice TV** is showing a nationally-delivered enhanced pay-per-view service that gives consumers a second chance to watch some of America's most popular TV shows. Your Choice TV provides time-shifted programming from major broadcast and cable networks.
- **Zenith Electronics Corp.** is demonstrating two-way cable data delivery and data delivery using cable in one direction and telephone lines for the return direction. The display includes Web pages on an Internet appliance television. ▼

# Winter Conference Agenda Set

**C**ableLabs has announced the agenda for its Winter Conference, to be held February 26-28, 1997 at the Wyndham Emerald Plaza Hotel in San Diego, California.

Responding to the current interests of its member companies, CableLabs has focused the conference on the economics and technologies of deploying enhanced services. This agenda builds on the findings of a number of current CableLabs projects.

Attendance at CableLabs conferences is limited to cable system operators. Cable operators that are not members of CableLabs are required to pay a fee to attend the conferences.

As cable operators move from trials to revenue-producing deployments of high-speed data, digital video and telephony, many are finding innovative ways of providing these services. At the same time, the economics of delivering the enhanced services is

becoming better understood.

The Winter Conference will include sessions on the technologies themselves, CableLabs' modem testing program, operational support systems, and a look into the future of cable-delivered services.

For more information about the Winter Conference please contact Tasha Abbott or Janet Johnson at (303) 661-9100/phone; (303) 661-9199/fax. ▼

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or if you have a change of address:  
Please fill out the form below and fax to CableLabs  
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