

THE VESA MONITOR

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■ **DI Symposium in Milpitas Features Complete Slate of PC-CE Convergence, Compatibility Presentations**

VESA's annual Display Interfaces Symposium in Milpitas Sept. 16 and 17 features a full schedule of new presentations on PC-CE convergence, compatibility, and interface requirements from across the industry, in a 16-session program that will be VESA's most extensive ever.

The annual 2004 Display Interfaces Symposium, located at the Embassy Suites Hotel, 901 East Calaveras Blvd., opens promptly at 8:15 am Sept. 16 with opening registration. Session one features an address by veteran industry analyst Alfred Poor entitled "Convergence: Points of Confusion."

The program includes the following presentations:

- LCD—TVs, will be hosted by **Ian Miller of Samsung, VESA Chairman.**
- VESA Television Compatibility, Bob Myers, Hewlett-Packard**
- Extended Home Theater, Jack Chaney, Samsung**
- PC/CE Convergence Issues, Ruston Panabaker, Microsoft**
- A Report on NAVI from Bob Myers of Hewlett-Packard**
- PC/TV Convergence George Wiley, Qualcomm**
- VESA's FDMI Specification, Tim Hager, Ergotron**
- Converging PC and CE with a Home Networking Platform, Bill Thompson, USTec**
- Interface Requirements for Non-PC Displays, Jeffrey Dunninghoo, California Micro Devices**
- BT.601 Over 1394, Dr. Jalil Oraee, Oxford Semiconductor**
- Chromatic Encoding: A Low Power Encoding Technique for Digital Visual Interface, Wei-Chung Chen, University of Southern California**
- New Instrument for Testing Auxiliary Channel Interfaces, Mark Stockfisch, Quantum Data**



At the end of day one, Alfred Poor will moderate a six-member panel entitled "How Will Entertainment Displays Evolve over the Next Five Years?"

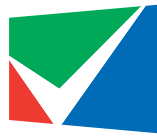
For a complete list of the events and sessions, as well as information about registration, HYPERLINK "<http://www.vesa.org/events.html>" <http://www.vesa.org/events.html>

■ **VESA DPVL Standard Solves High Information Content Monitor Bandwidth Issues**

Due to recent advances in display manufacturing technologies, display devices are now able to provide much higher information content – both at higher pixel-density and at higher numbers of pixels. For example, the IBM T221 display has a pixel density of 204 pixels per inch. One of the issues that limit the wide adoption of high information content monitors is the monitor interface, since these monitors require much higher transmission bandwidth than conventional monitor interfaces can provide. Digital Packet Video Link (DPVL) solves this problem by providing selective refresh while still utilizing conventional digital monitor interfaces. The selective refresh allows the host to transmit only modified regions of the screen. Thus, the video transmission rate is decoupled from the refresh rate of the display device and much lower transmission rates can ensue. This protocol can also be used in bandwidth and/or power constrained systems. On the host side, it is the intention of this DPVL protocol to avoid the requirement of building specialized graphics hardware. Rather, the changes are limited to an additional software layer which resides above the video device driver and generates DPVL video packets with the aid of the driver instead of full raster scans of the video memory contents.

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DPVL is a high-level video stream protocol which facilitates the advancement of high information content monitors independently whether displaying that high information content is achieved within a single monitor unit or by an array of monitors. Such monitors require a higher communication bandwidth than conventional monitor interfaces, e.g. DVI, can provide. This standard defines video packet structures, a capability management scheme and a monitor control scheme. At the SID 2004 conference held this past May in Seattle, DPVL display prototypes from IBM (using a modified T221), EIZO-NANAO and Techsource, along with a DPVL software driver from IBM Research were exhibited. DPVL is a high-level video stream protocol, which facilitates the advancement of high information content monitors independently of whether displaying that high information content is achieved within a single monitor unit or by an array of monitors. Such monitors require a higher communication bandwidth than conventional monitor interfaces, e.g. DVI, can provide. This standard defines video packet structures, a capability management scheme and a monitor control scheme. At the SID 2004 conference held this past May in Seattle, DPVL display prototypes from IBM (using a modified T221), EIZO-NANAO and Techsource, along with a DPVL software driver from IBM Research were exhibited.



IBM, EIZO-NANAO and Techsource featured a Digital Video Packet Link (DPVL) demonstration that drew a large crowd of interested attendees at the SID Conference held this past May in Seattle.

■ New MDDI Standard Ideal for High-Speed, Short Range Communication

VESA's new Mobile Display Device Interface Standard (MDDI) has been developed to enable high-speed, cost-efficient, low-power communication for the latest portable electronics products.

MDDI describes the requirements of a high-speed digital packet interface that lets portable devices transport digital

images from small portable devices to larger external displays. It applies a miniature connector system and thin flexible cable ideal for linking portable computing, communications and entertainment devices to emerging products such as wearable micro displays. The standard also includes details on simplifying connections between host processors and a devices display, to reduce the cost and increase the reliability of these connections.

"The MDDI standard addresses the growing feature set of new portable devices, which are adding significant performance and capabilities as they become smaller and require less power," said Bill Lempesis, VESA's executive director."

Mobile devices are easier to use when fewer cables are required to connect multiple devices that are commonly needed for a full audio-visual experience. MDDI provides support for audio transducers, keyboards, pointing devices and other input devices integrated with a mobile display. MDDI is extensible so it can support user-defined data types. Specific examples include:

- Full-motion video in the form of full or partial-screen bitmap fields or compressed video, depending on device capability.
- Static bitmaps at low rates to conserve power and reduce implementation cost in some portable devices.
- PCM or compressed audio data at any resolution or rate compatible with the serial link speed.
- Pointing device position and selection.
- Control and status information in both directions to detect capability of the opposing device and set its operating parameters.
- User definable data types for capabilities yet to be defined.

■ VESA's NAVI Standard Adds Digital Features, Functionality to Analog Video Signal Set

VESA's New Analog Video Interface standard (NAVI) -- developed to provide video systems with the advantages of digital interfaces while maintaining VGA compatibility -- is ready.

The VESA New Analog Video Interface standard was developed in response to a desire on the part of many VESA members to provide the advantages of current "digital" interfaces, while not requiring an interface which is completely incompatible with the installed base of analog ("VGA" and other) video systems. The NAVI standard achieves this by adding features and functionality to the existing analog video signal set, in such a way that compatibility with VGA and similar



interfaces is maintained. The result is an interface which provides excellent support for both CRT and non-CRT (fixed-format) display devices and a clear growth path from the existing VGA standard connector through new types providing improved performance and form factors. In addition, the NAVI interface also provides a true "digital" mode, enabling digital video transmissions (and ultimately, the support of advanced digital-only functionality such as packetized video, compression and encryption, etc.) on this same basic VGA compatible physical and electrical interface definitions.

The NAVI standard also defines several additional features which greatly enhance the usefulness of the traditional analog interface in modern systems. First, two levels of serial data transmission, using the existing connections of the VGA interface, are defined by this specification, including a medium-speed bidirectional communications protocol. These provide support for digital audio transmission from the host system to the display, as well as enabling a content-protection system to be optionally supported in NAVI compliant devices. There is also support for automatic compensation for cable losses and skew, again significantly improving the performance of the basic analog interface. In addition, an optional "true digital" mode (NAVI Mode D) is defined, which takes advantage of the basic NAVI enhancements and an AM digital encoding scheme to transmit digital information in the 2-5 Gbit/second range, a capacity equal to that of existing digital interface standards and more than adequate to support advanced video standards such as the VESA Digital Packet Video Link (DPVL) specification. This is achieved while keeping the physical and electrical interfaces fully VGA-compatible and capable of supporting unmodified "legacy" VGA devices.

Within the NAVI system, three standard connectors are defined at this time. First, the use of the NAVI features on the standard "VGA" (15-pin HD) connector is defined; this provides the functionality described above for systems which also wish to retain complete compatibility with the existing analog video interface. This is referred to as the "NAVI-V" (for "VGA") implementation. Also, two new connectors have been defined, providing the NAVI functionality with additional features and improved performance in new physical form factors. The first, "NAVI-D" (for Desktop) is intended to be the standard connector for desktop systems and monitors, and similar larger equipment. It provides greatly improved analog signal performance (and support for faster operation in the digital NAVI Mode D) as compared with the VGA connector, as well as support for added features such as power. In addition, a much smaller connector, the NAVI-P (for Portable) has also been defined, making NAVI support possible in small form-factor, portable devices such as PDAs, Tablet PCs, and similar products.

With the added functionality, and especially the support for digital audio and video transmission and content protection on both the analog and digital display interfaces, it is expected that the NAVI definition may also be very attractive for use in consumer electronics applications, such as televisions, VCRs,

set-top converter boxes and similar appliances. To make the system better suited to such use, this standard also defines the use of optional color encoding methods (such as composite video, Y/C video, and YUV) on the various NAVI implementations.

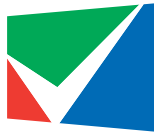
■ Flat Display Mounting Interface (FDMI) Task Group to Reconvene

The Display Systems Committee has approved the Reconvening of the Flat Display Mounting Interfaces (FDMI) Task Group to perform a review and upgrade of the existing FDMI Standard as required to correct any inconsistencies, provide clarification and add any other content as needed.

Some of the tasks that have been proposed are: Put together a membership-sponsored, joint effort to develop and fund UL standard criteria for mount of large flat display/TV technology to various types of wall construction. Develop a mounting interface standard for Pen Tablets (PTMI). Ergotron has completed a comprehensive survey about the requirements and benefits of a proposed Pen Tablet Mounting Interface Standard that includes data from health care professionals about buying plans, primary pen tablet applications, and other details. Conducted by Ergotron in mid 2003, the survey tracked responses at total of 201 hospitals nationwide. It resulted in a 57-page document that indicates a strong interest in mounting interface standards for docking stations and for pen tablets, Ergotron will be sharing the results of this survey with the Systems Committee and FPMI Task Group members. Members who wish to receive a copy are asked to contact the VESA office by Sept. 15. Once a final request count is tabulated, copies will be printed and distributed.

Any other items which may come before the workgroup for consideration and possible action.

The first meeting of the FDMI Task Group will be held on Tuesday, September 14 from 1pm to 2pm at the VESA office. Teleconferencing is available.



Join Industry Leaders As They Discuss The Issue Of Convergence And Its Impact On Display Technology

■ SEPTEMBER 16 & 17, 2004



Don't miss the chance to see how convergence is changing the display industry. At DI 2004 industry leaders will cover issues ranging from compliance to interoperability and the impact on current standards and the next generation.

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Each admission includes luncheon and reception

For more information about Display Interfaces 2004, please visit www.VESA.org or call 408-957-9270

■ Be a part of the event that leading consumer electronics and PC industry professionals turn to for the technical information to ensure their companies have the competitive edge.

This year's theme of convergence has attracted many distinguished presenters such as Samsung, Microsoft, Hewlett-Packard, Qualcomm, Ergotron, UStec, California Micro Devices, Oxford Semiconductor, USC, Quantum Data and display expert Alfred Poor among others.

■ The topics listed below provide a sample of the content that will be presented:

- * Convergence: Points of Confusion
- * VESA Television Compatibility Initiatives
- * Converging PC & CE with a Home Networking Platform - Finally a Real Solution
- * Extended Home Theater
- * How will Home Entertainment Displays Evolve over the Next Five Years?
- * LCD TV
- * BT.601 over 1394
- * VESA Flat Display Mounting Interface (FDMI) for Mounting PCs/TVs
- * PC/TV Convergence: Devices that Fit in Your Pocket

Convergence is offering consumers more exciting breakthroughs and compelling new choices than ever before.

Get ahead of the curve by joining your colleagues in Milpitas on September 16 & 17

The Video Electronics Standards Association is a worldwide organization that develops and promotes timely, relevant, open display and display interface standards.

■ NEW MEMBERS:



Established in 1984, Compal Electronics has developed itself into one of the leading companies in the global IT industry. In 2003, its total annual revenue reached US 4.713 billion dollars and its worldwide workforce to over 10,000. Compal has many customer service locations in Taiwan, China, South Korea, the U.S. and the U.K. which provide customers with prompt and flexible services. For more information go to www.compal.com

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PHILIPS

Royal Philips Electronics of the Netherlands is one of the world's biggest electronics companies and Europe's largest, with sales of EUR 29 billion in 2003. It is a global leader in color television sets, lighting, electric shavers, medical diagnostic imaging and patient monitoring, and one-chip TV products. Its 165,300 employees in more than 60 countries are active in the areas of lighting, consumer electronics, domestic appliances, semiconductors and medical systems.

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Sanus Systems designs and builds a broad variety of audio/video furnishings, mounts and accessories that will satisfy even the most demanding audio/video enthusiast or interior designer. Every Sanus product is engineered to enhance both the A/V system and the surrounding décor. Today Sanus offers over 200 products, including home theater units, TV stands, audio racks, wall mounts and speaker supports. Sanus products are available at thousands of retail locations nationwide.