VESA Defining New Requirements for DisplayPort Standard to Address Automotive Display Applications

Vehicular DisplayPort (VDP) will leverage enhancements being defined for the versatile DisplayPort standard to enable new capabilities for automotive displays

SAN JOSE, Calif. – August 19, 2019 – The Video Electronics Standards Association (VESA®) today announced that it has several major efforts underway to bring the benefits of the ubiquitous DisplayPort video/audio interface to the automotive market. Among these, VESA is continuing to refine the existing DisplayPort standard version (DP 2.0) – which offers the highest video performance and versatility on computers, smart devices and displays – with new features and capabilities, including those applicable to automotive display applications. In addition, VESA is finalizing the requirements for an automotive version of DisplayPort, called Vehicular DisplayPort, or VDP, that will leverage features found in both the DisplayPort and VESA's Embedded DisplayPort (eDP) standards.

New Display Interfaces Needed for Automotive Market
The emergence of high-resolution displays in automotive applications is creating the need to transport multi-gigabit-per-second display streams between automotive sub-systems. As panel resolutions exceed full HD (1080p), the commonly used LVDS-based display interface is becoming impractical from a wire-count perspective. The increased data rates and reduced wire counts offered by DP and eDP, as well as other performance benefits enabled by these standards such as reduced power, video compression and the ability to drive multiple displays from a single source, are attractive for higher-resolution automotive displays.

While DP 2.0 represents a major boost in performance over previous DP generations, VESA is continuing to develop the standard with further refinements and performance improvements, including several that are applicable to the automotive market. Among these is the refinement of the DP tunneling protocol to facilitate the transmission of DP data packets across other interfaces. Another area of development is a "bulk" image transport protocol for the non-isochronous delivery of display data. As an example, this can enable the delivery of relatively static display images (where high data transmission rates are not needed) over lower bandwidth transports to help reduce power consumption.

Separately, VESA's Vehicular Taskforce Group (VTG) is finalizing requirements for an automotive version of DP, called VDP, that will leverage features from both the DP and eDP standards. These include:

- *4K-and-beyond resolution capability at higher refresh rates*
- *Multiple and non-similar display support with a single interface*
- *Display data compression* – enabling higher display performance over a reduced wire count
- *Panel self-refresh (PSR)* – saves system power and reduces video controller unit heat dissipation by allowing the video source to enter a low-power state when the display image is static
- *Content protection* – supported via High-bandwidth Digital Content Protection (HDCP) key exchanges
- *High dynamic range (HDR) and wide color gamut* – enabling support for displays that deliver better contrast and color accuracy, as well as more vibrant colors, versus standard dynamic displays
- *Automatic physical-layer link training* – for high-speed data transport robustness

To address the unique requirements for automotive display applications, VDP requirements also include the following capabilities:

- *Higher-speed sideband communications*
- *Adaptation to high-speed serialized automotive interfaces*
- *Functional safety*
- *Transport security and device authentication*
- *Physical layer tuning optimized for automotive electromagnetic compatibility (EMC) compliance, including radiation and noise sensitivity*

Representatives will be available to discuss VESA's automotive display efforts at the 26th Annual SID Symposium on Vehicle Displays & Interfaces, to be held September 24-25 at the Burton Manor Conference Center in Livonia, Mich. Attendees interested in learning more can visit VESA at Booth 79.

About VESA
The Video Electronics Standards Association (VESA) is an international, non-profit standards association representing a global network of more than 280 hardware, software, computer, display and component manufacturers committed to developing and promoting the electronics industry. For 30 years, VESA has created and supported simple, universal and cross-product solutions for today's video and electronics industry. The association's standards include DisplayPort™, the industry replacement for DVI, LVDS and VGA. DisplayPort utilizes a state-of-the-art digital protocol and provides an expandable foundation to enable astonishing digital display experiences. For more information on VESA, please visit http://www.vesa.org/.

VESA® is a registered trademark and DisplayPort™ is a trademark of VESA. All other trademarks, service marks, registered trademarks, and registered service marks are the property of their respective owners.

Contacts:

Bill Lempesis	David Moreno
Executive Director	Principal
VESA	Open Sky Communications
Tel: (408) 982-3850	Tel: (415) 519-3915
E-mail: bill@vesa.org	E-mail: dmoreno@openskypr.com

# # #