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VESA Publishes DisplayPort™ Standard Version 1.4

DP 1.4 features Display Stream Compression 1.2 transport, Forward Error Correction, enhanced display resolution and expanded audio transport capabilities

SAN JOSE, Calif. – March 1, 2016 – The Video Electronics Standards Association (VESA®) today announced it has published version 1.4 of the DisplayPort (DP) audio/video standard. The first major update to DisplayPort since version 1.3 was released in September 2014, DP 1.4 is also the first DP standard to take advantage of VESA’s Display Stream Compression (DSC) technology. DSC version 1.2 transport enables up to 3:1 compression ratio and has been deemed, through VESA membership testing, to be visually lossless. Together with other new capabilities, this makes the latest version of DP ideally suited for implementation in high-end electronic products demanding premier sound and image quality.

DisplayPort is a packet-based, extensible protocol for transporting video and audio data. Initially introduced as a new external interface, its flexibility has enabled its adaptation to embedded displays and incorporation into other connectors like the new reversible USB Type-C™ interface and Thunderbolt™. Its Multi-Stream Transport (MST) capability enables high-resolution support of multiple monitors on a single display interface.

In September 2014, VESA published DP 1.3, which has been the baseline for new system development. DP 1.3 increased the maximum link bandwidth to 32.4 Gbps, with each of four lanes running at a link rate of 8.1 Gbps/lane, a 50-percent increase over the previous DP 1.2a specification. DP 1.3 added extra protocol flexibility to enable more seamless operation over the USB Type-C connector in the form of the DisplayPort Alt Mode. The increased link rate increased the uncompressed display resolution support up to 5K x 3K (5120x2880), and also upped the MST resolution, enabling simultaneous use of two 4K UHD monitors, each with a pixel resolution of 3840x2160, when using VESA Coordinated Video Timing.

DP 1.4 further builds on the capabilities of the standard’s prior incarnations. The use of video transport compression enhances the ability to take advantage of the USB Type-C connector, enabling both high-definition video and SuperSpeed USB, while also facilitating High Dynamic Range (HDR) and 8K video across the DisplayPort or USB-C connector. Examples of increased display resolution with the new standard include 8Kp60Hz HDR deep color and 4Kp120Hz HDR deep color. Other key new features include:

- **Forward Error Correction** – FEC, which overlays the DSC 1.2 transport, addresses the transport error resiliency needed for compressed video transport to external displays.
• **HDR meta transport** – HDR meta transport uses the “secondary data packet” transport inherent in the DisplayPort standard to provide support for the current CTA 861.3 standard, which is useful for DP to HDMI 2.0a protocol conversion, among other examples. It also offers a flexible metadata packet transport to support future dynamic HDR standards.

• **Expanded audio transport** – This spec extension covers capabilities such as 32 audio channels, 1536kHz sample rate, and inclusion of all known audio formats.

“This significant update to the DisplayPort standard is vital to continued growth of adoption for both DP and DSC, particularly in such fast-growing markets as digital television and automotive infotainment,” said VESA Board Chair Alan Kobayashi, fellow and executive R&D management for Smart Connectivity Group at MegaChips Technology America. “New applications are demanding displays with better resolution, wider color gamut, and increased dynamic range. Consumers and others are also recognizing the value and ease-of-use associated with running multiple displays on one interface, which is another area we addressed in this new release with MST improvements. We believe the tools provided in this new DP standard release will enable a quantum leap forward in display quality, which leverage DSC compression along with transport of high-quality audio and video content.”

**About VESA**
The Video Electronics Standards Association (VESA) is an international, non-profit standards association representing a global network of more than 230 hardware, software, computer, display and component manufacturers committed to developing and promoting the electronics industry. VESA has an established 25-year track record of creating and supporting 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/](http://www.vesa.org/).

**Contact**
Bill Lempesis  
Executive Director  
VESA  
Tel: (408) 982-3850  
E-mail: [bill@vesa.org](mailto:bill@vesa.org)

David Moreno  
Vice President  
MCA, Inc.  
Tel: (650) 968-8900, ext. 125  
E-mail: [dmoreno@mcapr.com](mailto:dmoreno@mcapr.com)

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