Hardent Delivers Interoperable VESA DSC IP Solution for the New Arm Mali-D71 Processor

Combined processing capabilities will enable designers to create higher resolution displays for 4K and beyond

Hardent, the leading expert in VESA Display Stream Compression (DSC) technology, today announced a collaboration with Arm to deliver an interoperable VESA DSC IP solution for the new Arm® Mali™-D71 display processor. Hardent's VESA DSC IP cores, combined with the processing capabilities of the Mali-D71 processor, will enable designers to create 4K+ displays for next-generation mobile and augmented/virtual reality (AR/VR) applications.

Developed by the Video Electronics Standards Association (VESA), DSC is an industry-wide compression standard for display applications that offers visually lossless, ultra-low latency performance. By reducing transmission bandwidth by up to 3X, the DSC algorithm enables higher resolution video to be carried on transport interfaces such as MIPI® Display Serial Interface (DSI) and DisplayPort™1.4. Using DSC compression to handle the increased pixel data required for higher resolution displays reduces power consumption, system costs, and electromagnetic interference (EMI).

DSC was initially developed with mobile devices in mind and has, since its release in 2014, seen widespread adoption from the mobile industry. With the emergence of new display-based products, such as AR/VR headsets, other industries are now leveraging DSC compression in order to support the bandwidth requirements associated with creating immersive higher resolution displays. "Each industry has its own unique transport and display requirements," explains Alain Legault, VP IP Products at Hardent. "Whether it is the increased colour depth needed for HDR10 mobile content, or faster frame rates for AR/VR applications, VESA DSC provides a scalable solution to meet the demands of current and future display products".

The Mali-D71 display processor offers a brand-new architecture that supports all major industry display standards including VESA Display Stream Compression. Mali-D71 is optimized to support display resolutions of up to 4K, the higher performance requirements (up to 4K120FPS) needed for VR applications, and HDR10 content.

"Compression is a key requirement for developing higher resolution displays for next-generation applications, including premium mobile VR displays," said Vassilis Androutsopoulos, senior product manager, Client Line of Business, Arm. "Collaborating with Hardent ensures compatibility between Hardent DSC IP cores and the Mali-D71 processor, providing designers with access to ecosystem solutions supporting the high-performance, low-bandwidth requirements for these applications."

Hardent's VESA DSC encoder and decoder IP cores have undergone a series of detailed tests to ensure optimized performance with the Mali-D71, and reduce the complexities of integration and porting.

A live demo of Hardent's VESA DSC encoder and decoder IP cores integrated with the Mali-D71 processor will be shown at the Arm Tech Symposia events in Shanghai, Beijing, and Shenzhen. A series of compressed vs. uncompressed HDR10 video content will be shown side-by-side to highlight the visually lossless compression quality of VESA DSC.

For more information about VESA Display Stream Compression IP solutions, contact Hardent.

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