

# Graphics: Libdrm, AMDGPU, AR/VR and Gallium3D

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## [Libdrm 2.4.100 Released With Bits For Intel Elkhart Lake, Tiger Lake Graphics](#) [2]

AMD open-source developer Marek Ol?ák on Wednesday released libdrm 2.4.100 as the newest feature update to this Mesa DRM library.

On the AMD front there are a number of RAS tests added, a new amdgpu\_cs\_query\_reset\_state2 interface, and other expanded AMDGPU test coverage.



## [AMDGPU GFX9+ Format Modifiers Being Worked On For Better DCC Handling](#) [3]

RADV Vulkan driver developer Bas Nieuwenhuizen of Google has ventured into kernel space in working on format modifiers support for Vega/GFX9 and newer.

This DRM format modifiers support for GFX9+ is being worked on for helping to evaluate when delta color compression (DCC) can be used and any other requirements around that DCC handling. Bas explained, "This is particularly useful to determine if we can use DCC, and whether we need an extra display compatible DCC metadata plane."



## [Free software support for virtual and augmented reality](#) [4]

A talk at the recent X.Org Developers Conference in Montréal, Canada looked at support for "XR" in free software. XR is an umbrella term that includes both virtual reality (VR) and augmented reality (AR). In the talk, Joey Ferwerda and Christoph Haag from Collabora gave an overview of XR and the Monado project that provides support for those types of applications.

Ferwerda started by defining the term "HMD", which predates VR and AR. It is a head-mounted display, which basically means "taking a screen and some sensors and duct-taping it to your face". All of the devices that are being used for XR are HMDs. They typically include some kind of tracking system to determine the position and orientation of the HMD itself. Multiple different technologies, including inertial measurement units (IMUs), photodiodes, lasers, and cameras, are used to do the tracking depending on the device and its use case.

AR is intended to augment the real world with extra information; the user sees the real world around them, but various kinds of status and additional data is tagged to objects or locations in their view of the world. AR is a rather over-hyped technology these days, he said. The general idea is that users would wear glasses that would augment their view in some fashion, but, unfortunately, what most people think of as AR is Pokémon Go.

VR uses two screens, one for each eye, to create a 3D world that the user inhabits and can interact with in some fashion. Instead of seeing the real world, the user sees a completely separate world. There are two words that are often used to describe the feel of VR, he said: "presence" and "immersion". That means users are aware of themselves as being part of the VR environment.

XR encompasses both. Ferwerda said that he is not really sure what the "X" stands for; he has heard "cross reality" and "mixed reality" for XR. Haag said that "extended reality" was another definition that he had heard.

- [Intel Now Aiming For Gallium3D OpenGL Default For Mesa 20.0](#) [5]

For the better part of two years now Intel has been working on this new "Iris" Gallium3D driver for supporting Broadwell "Gen8" graphics and newer as the eventual replacement to their long-standing i965 classic driver. With Tiger Lake "Gen12" Xe graphics, it's in fact Iris Gallium3D only. In our testing of Broadwell through the \*lakes, this Gallium3D driver has been working out terrific on Mesa 19.2 stable and Mesa 19.3 development. But it looks like Intel is going to play it safe and punt the default change-over to next quarter's Mesa 20.0 cycle.

## [Graphics/Benchmarks](#)

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[3] [https://www.phoronix.com/scan.php?page=news\\_item&px=AMD-GFX9-Format-Modifiers](https://www.phoronix.com/scan.php?page=news_item&px=AMD-GFX9-Format-Modifiers)

[4] <https://lwn.net/Articles/801494/>

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