

## Facebook Shares Open 3D-360 Video Capture System

Written by Bob Snyder  
27 July 2016

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Facebook designed and built a durable, high-quality 3D-360 video capture system—and they are sharing it.

**Why?** Facebook wants to create a pro end-to-end system to capture, edit, and render high-quality 3D-360 video. They expect this contributes to the emerging 3D-360 camera landscape by enabling more VR content producers and artists to produce 3D-360 video.

The open-source system includes a design for camera hardware and the accompanying stitching code-- and both are available on GitHub this summer. **Developers can leverage the Facebook designs and code, and content creators can use the camera in their productions.**

As expected with Facebook, the product is distinguished by its algorithms. Building on top of an optical flow algorithm is a mathematically rigorous approach that Facebook uses to produce “superior results.” Their code uses optical flow to compute left-right eye stereo disparity, leveraging this ability to generate seamless stereoscopic 360 panoramas, with little to no hand intervention.

The stitching code drastically reduces post-production time. What is usually done by hand can

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now be done by algorithm, taking the stitching time from weeks to overnight.

The system exports 4K, 6K, and 8K video for each eye. **The 8K videos double industry standard output and can be played on Gear VR with Facebook's custom Dynamic Streaming technology.**

Facebook says, “When we started this project, all the existing 3D-360 video cameras we saw were either proprietary (so the community could not access those designs), available only by special request, or fundamentally unreliable as an end-to-end system in a production environment. In most cases, the cameras in these systems would overheat, the rigs weren't sturdy enough to mount to production gear, and the stitching would take a prohibitively long time because it had to be done by hand.”

“So we set out to design and build a 3D-360 video camera that did what you'd expect an everyday camera to do — capture, edit, and render reliably every time. That sounds obvious and almost silly, but it turned out to be a technically daunting challenge for 3D-360 video.”

Watch [A Short Film on Facebook's 3D 360 VideoCapture System](#)

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