

Extended Reality

ADVANCED TECHNOLOGY SHAPES VIRTUAL STORYTELLING
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Extended reality (XR) is a visual medium that should no longer be looked

at as a fad but rather a mainstay set of tools that can connect audiences in ways no traditional cinema camera can. Directors and DPs are using augmented reality (AR), mixed reality (MR) and virtual reality (VR) to reimagine new and immersive experiences in creative storytelling. The technology behind these demanding workflows includes state-of-the-art cameras, rigs, headsets and software tools that can build complete environments. Here are some of those being used in production today:



MOBIUS 2.0 POV VR 360

Radiant Images' Mobius 2.0 mounts directly onto an actor's or user's head like a helmet, providing 360-degree, 180-degree and POV shooting in stereo or monoscopic images. The lightweight housing is completely modular and adjustable to fit different head sizes. The rig was designed for the Panasonic GH5, Sony Alpha series and GoPro Hero; up to 10 cameras can be placed around the head to capture images from all sides. Mobius 2.0 also provides alternative perspectives of the performer for the post-production stitching process.

IN PRACTICE: Early adopters include director Guy Norris for the *Suicide Squad: 360 VR Experience*, for which the Mobius 2.0 was placed on stunt actors for the characters Harley Quinn, Deadshot and Katarina in order to put viewers directly in scenes from the movie. Since the success of the *Suicide Squad* experience, Warner Bros. has continued its VR venture with *IT* and *Justice League* campaigns.



VUZE

Human Eyes' Vuze is a VR camera that can fit into your back pocket. Available in two models—the original Vuze and newer Vuze+—it records VR footage using eight Sony FHD sensors equally spaced to capture stereoscopic 3D 360-degree videos and photos onto microSD cards. Video is compressed in H.264 with four audio recordings in AAC. ISO ranges from 100-1600, with the Vuze+ offering a bump in optic quality and the ability to broadcast a live stream in 360-degree 3D.

IN PRACTICE: National Geographic's *One Strange Rock* from filmmaker Darren Aronofsky took Vuze to the outer limits where astronauts filmed the International Space Station and recorded the famous Cupola view of Earth for the exploratory series.

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—Greg Nicotero, director of extended content for *The Walking Dead*

JAUNT ONE

Jaunt ONE is a stereoscopic cinema camera that features 24 camera modules capable of capturing 8K images up to 120 fps. The system sports global shutter, 10 stops of dynamic range, auto or manual exposure adjustments on each module, and remote control or live monitoring options—all on lenses that provide 130-degree FOV at a fixed f/2.9 aperture. One button start/stop recording captures the 360-degree coverage while supporting audio through ambisonic field recordings or in post using Dolby Atmos (surround-sound technology).

IN PRACTICE: Many films and TV shows have employed the camera, including *Invisible* from director Doug Liman. It's been used on AMC's *The Walking Dead* on several occasions, offering fans extended content with director Greg Nicotero at the helm. “The technology has grown a lot in just the last year,” says Nicotero. “The VR content we created for the premiere of season eight combined the 360-degree experience with multiple camera setups. We haven't done that before. VR gives us an opportunity to provide our viewers with content they wouldn't normally see and allows us to build on our story.”

