

Augmented Reality and Virtual Reality

Next Generation Immersive Video Technology:

Virtual reality (VR) and augmented reality (AR) are two new hot technologies that promise to enhance consumer engagement at-home, in-store, on-site, and anywhere where there's a screen.

VR, a catch-all for immersive or interactive multimedia, is an immersive computer-simulated reality experience that "transports" viewers from their physical reality into a closed virtual reality. VR typically requires a headset device for enhanced sight and sound, while the most involved experiences can include external motion tracking, and sensory inputs like touch and smell.



“AR enhances the world around us, while VR creates new worlds for us to explore.”¹

[See full video here.](#)

A VR experience allows you to sit in your living room, put on goggles, and suddenly feel immersed in the sounds and sights of another universe. The technology is designed to manipulate your senses to feel as though you are experiencing that new virtual environment, moving and interacting with different people, places and objects.

In contrast, AR is designed to overlay digital images upon one's field of view, offering new ways of interacting with real objects in the physical world. Think of it as sitting in your home, putting on a head-mounted display, and suddenly seeing new characters and objects in your living room interacting with you and the physical space you inhabit.

Many experts predict that AR/VR will be as game-changing as the smartphone. Imagine:



Interactive AR-enhanced field trips for students to enrich their experiences at museums, historical buildings, and national parks.



AR-enhanced medical devices that put critical information in doctors' fields of vision and enable them to deliver more precise patient care.



Life-like AR/VR training simulations to prepare public safety professionals for their critical work in the field.

Enabling Mobile AR/VR with 5G Networks:

The AR/VR ecosystem is still working to create the high-quality mobile systems that will pull this technology from the pages of science fiction into our mainstream reality. AR/VR developers are eager to harness the power of cloud computing to design immersive and interactive experiences for consumers.

To make these engaging AR/VR experiences an everyday occurrence, however, network bandwidth and latency (speed and near real time) performance must far exceed today's capabilities. AT&T is designing its 5G network and 5G Evolution technology to drive mass-market adoption for the AR/VR ecosystem.

AT&T is working with startups, other large companies, to apply [innovative models](#) to the mobile AR/VR challenge.

For more on this topic, read an introductory [whitepaper](#) by our AT&T Foundry innovation team.

¹[Enabling Mobile Augmented and Virtual Reality with 5G Networks](#), Alisha Seam, Amy Poll, Remound Wright, Julius Mueller, PhD., and Faraz Hoodbhoy, AT&T Foundry White Paper, January 2017

