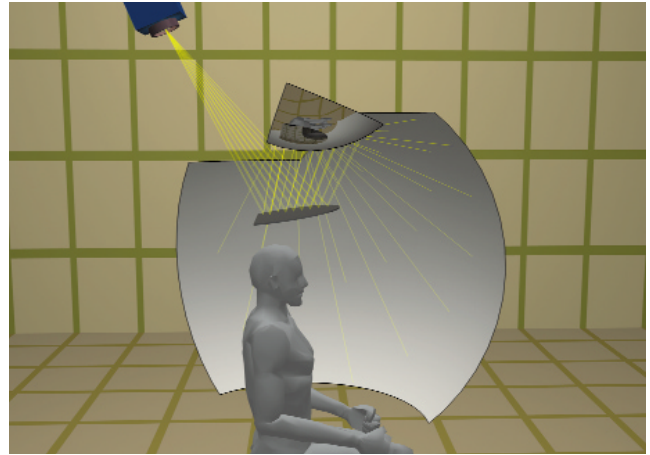


Visual immersion plays an important role in virtual environments. Head-mounted displays (HMDs) provide a full solid-angle view of virtual spaces, but their optical systems limit their fields of view.

In this image display system, a large screen is used as an alternative to HMDs. The sphere is an ideal shape for a screen that encompasses the human visual field because it maintains a constant distance between the eyes and the screen as the viewer's head rotates. Ensphered Vision uses a single projector and a convex mirror to display seamless images. The optical system employs two mirrors: a plain mirror, which bends the light so that the viewer can see the image from the center of the spherical screen, and a spherical convex mirror, which diverges the light from the projector in the spherical screen. This optical configuration provides a seamless wide-angle image in a very limited space. The screen's field of view is 270 degrees horizontally and 100 degrees vertically. The image totally surrounds the viewer. The image viewing angle is much larger than a dome screen displaying a fish-eye-lens image.



Vision