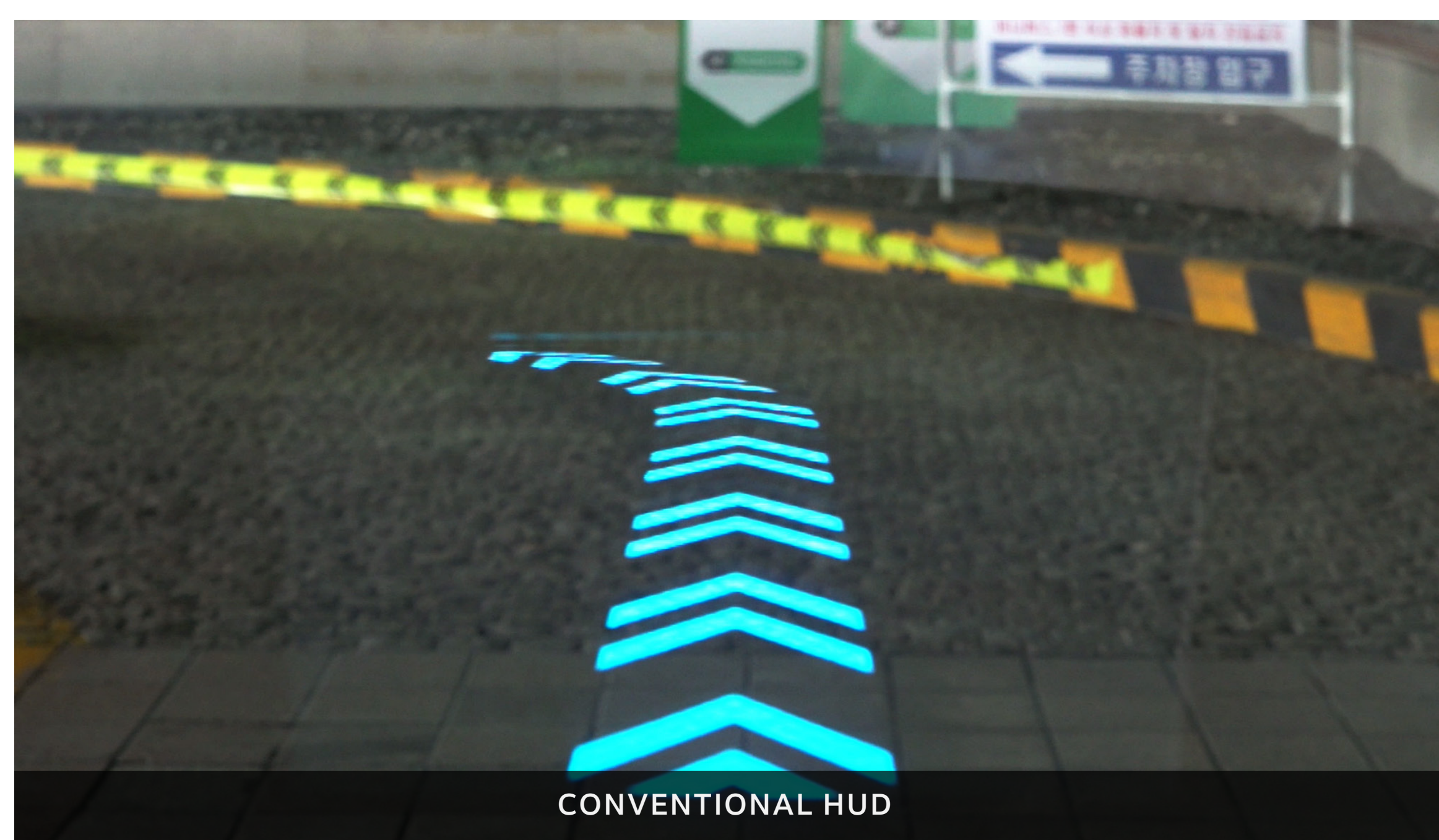


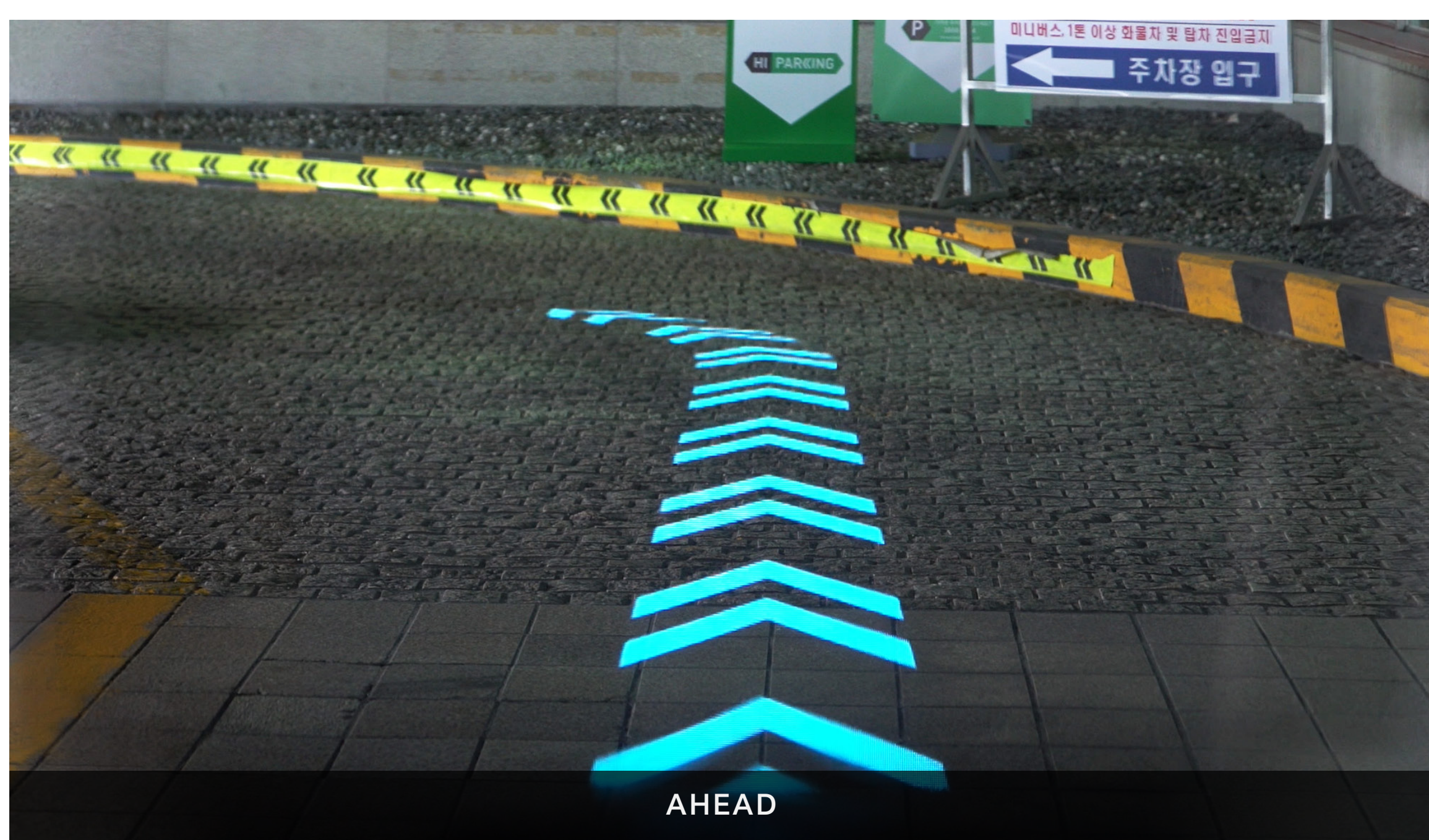
AHEAD THE WORLD'S FIRST 3D DISPLAY FOR HUDS



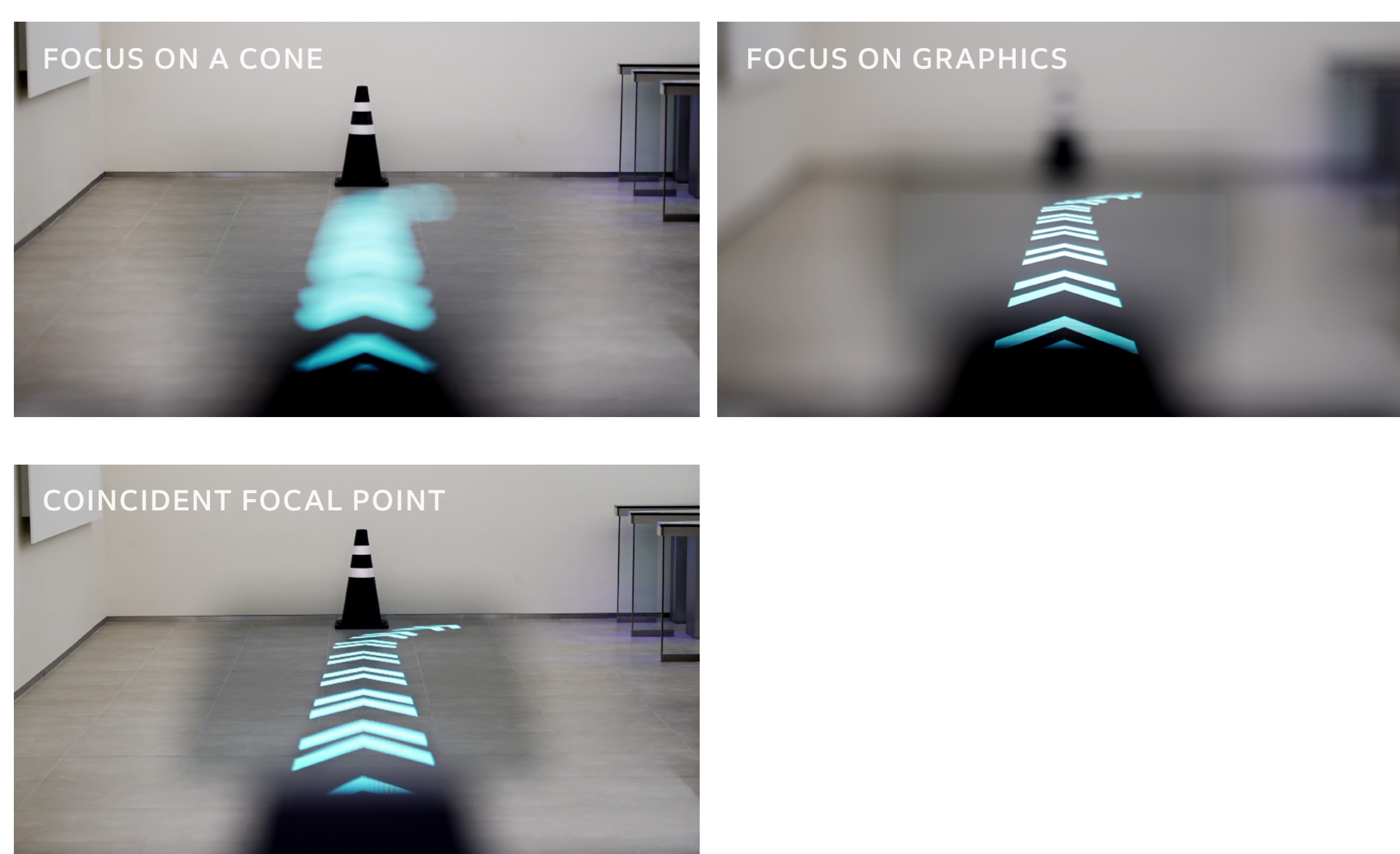
AHEAD 3D AR HUD



Conventional HUDs generate a virtual image floating regardless of an environment. Therefore, they force drivers to shift their eye focus repeatedly.



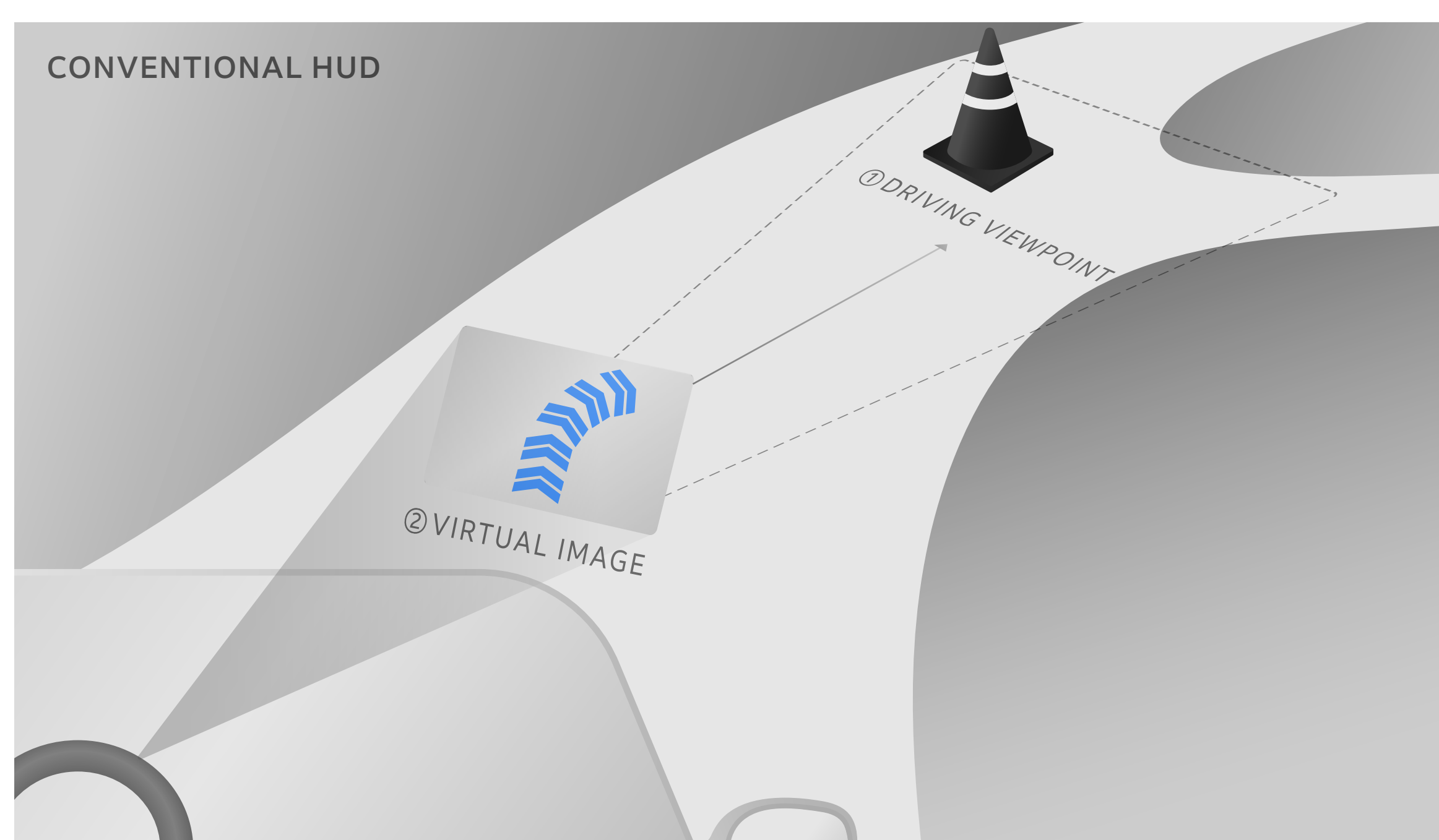
AHEAD's 3D display provides a virtual image fundamentally aligned with the driver's viewpoint realizing the most natural and convenient AR experience where information is fused with a road.



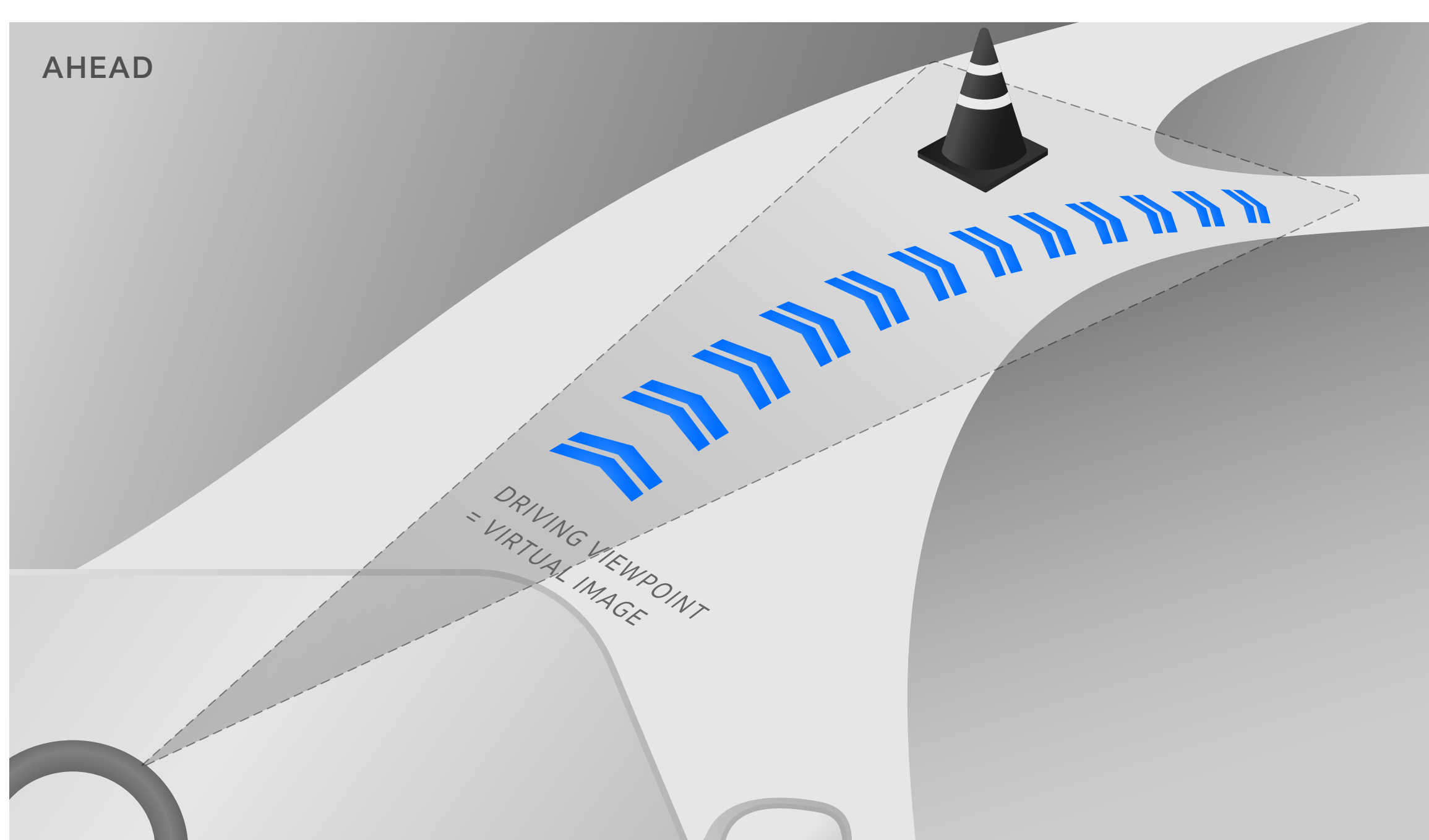
In the case of conventional HUDs, the focal distance of the objects and that of the images are distinct. Therefore, the information cannot be perceived with surroundings.

AHEAD provides coincident focal point between the objects and the images so that the information looks as if existing on the actual objects.

TECHNOLOGY The horizontal layout of a virtual image plane aligned with a driver's three-dimensional viewpoint



A head-up display (HUD), as defined, presents data without requiring drivers to look away from their usual viewpoints. However, as HUD creates a virtual image at a fixed single focal distance, drivers have to repeatedly shift focus between the driving viewpoint and the image, which could not only put a strain on drivers' eyes but also expose drivers to the risks of accidents due to their intervened attention from the road. On top of this, because HUD is unable to reflect drivers' surroundings when creating a virtual image, drivers have to perceive, comprehend and integrate the data while having to stay fully aware behind the wheels.



To overcome such challenges, instead of placing a virtual image at a fixed focal plane, it had to be placed three-dimensionally. AHEAD, the 3D AR HUD, creates a virtual image on a three-dimensional and horizontal layout as to reflect a driver's actual view while driving. In this regard, AHEAD allows the driver to effortlessly identify the virtual image as if it exists on the actual road. In short, AHEAD has actualized seamless augmented reality in driving.