

Tetravue have developed what they're calling the world's first lidar camera technology that captures real-time images with depth perception down to the pixel level.



Lidar is already integrated in autonomous vehicles, but TetraVue are taking a new approach by merging the multi-megapixel resolution and motion capture accuracy of digital video with lidar's range capability. By illuminating each scene with a non-visible, eye-safe flash at up to 30 frames per second, a TetraVue camera can process 100 times more real-time spatial and motion data about the surrounding environment. Distance to each pixel in an image is determined through a patented optical encoder coupled with a multi-megapixel CMOS image sensor; the camera then outputs a greyscale, high resolution image with depth information registered to each pixel. AI-enabled ADAS can use that data to more quickly identify dangerous situations.

The company say the new cameras add a "fourth dimension" to digital video, and seek to transform other markets as well. A better set of high-definition machine vision "eyes" could, for example, help transform retooling of manufacturing and distribution.

In cinematography and AR/VR applications, pixel-level depth information could revolutionise motion capture, digital asset acquisition, and 4D visualisation. By employing multiple cameras or panning a single camera, motion-accurate digital 3D models of actors, objects or scenes can be captured and rapidly turned into virtual worlds. That would transform labor-intensive manual approaches and reduce post-production time and cost.