

Self-driving systems company Aurora Innovation intend to acquire Blackmore Sensors and Analytics, a company in Bozeman, in the U.S. state of Montana, with roots supporting the U.S. military with sensors.



Lidar units are laser sensors that help autonomous vehicles detect obstacles and locate themselves on the road. Chris Urmson (photo), co-founder of Aurora and former head of Google's self-driving vehicle project, disputes assertions by the likes of Tesla's Elon Musk that lidar is not necessary: "Lidar is critical for developing the safest and most reliable self-driving system, one that can navigate our roads more safely than a human driver," he said.

Rather than sending pulsed light waves from its sensors like the majority of their competition, Blackmore use a continuous wave and modulate the frequency to gain detailed information on the distance of targets. Most companies modulate the amplitude of the waves, not the frequency. It's technically akin to a choice between AM and FM radio.

Blackmore say their FM-based approach results in a key advantage: It can measure the Doppler effect of velocity of detected objects, collecting enough information to show tires rotating on vehicles 200 yards away as well as granular depictions of the arms and legs of pedestrians. "We can essentially use a dim flashlight to see far away," CEO Randy Reibel says "I don't have to worry about eye safety issues. I don't have electrical power issues. Being single-photon sensitive is king in this industry, and not many people have it."