The Fourth Amendment of the U.S. Constitution provides, "[t]he right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized." The amendment prohibits the government from conducting unreasonable "searches" and "seizures." The "exclusionary rule" prohibits judges from admitting government evidence that was obtained in a manner that violates the Fourth Amendment.

Advances in technology have repeatedly forced courts to address thorny legal questions about the ability of law enforcement agencies to use these technologies to conduct searches within the constraints of the Fourth Amendment. As surveillance systems have become more powerful — think of the evolution from simple wire-tapping to infrared sensors and global positioning systems — the space for personal privacy and anonymity has been encroached.

There is a new, cutting-edge technology that may one day force the U.S. Supreme Court to once again tackle the issue of technology and the Fourth Amendment. Earlier this year, Bloomberg Business reported that, since January, police have been testing — without the public’s knowledge — an aerial surveillance system adapted from the surge in Iraq. This new technology uses a sophisticated array of cameras on a Cessna airplane that circles the skies for several hours at nearly the same altitude of massing clouds. The surveillance system uses a 192 million pixel, full-color surveillance sensor with a 300 mbps data link, image presentation and storage server.

The image exploitation software applies both georectification (the process by which a remotely sensed raster image is linked in to a coordinate system so that it can be accurately located onto a map) and orthorectification (the process of removing the effects of image perspective (tilt) and relief (terrain) effects for the purpose of creating a planimetrically correct image) to give users a near real-time ability to view all events occurring in an area up to 64 square kilometers. This advanced surveillance system can be used for disaster assessment by giving first responders the information they need to determine the breadth and depth of a disaster. It can identify victims on roofs, in rivers or in fire areas and help direct air and ground assets to victims more efficiently. It also can be configured by U.S. Customs and Border Protection to monitor hundreds of miles of border with ease.

It has been used in Baltimore and other cities to provide public officials and investigators with key information regarding public safety. The developers of the
technology have boasted that the system can tell the entire story of a crime and will help to reduce and deter crime in a responsible way. While the surveillance system has reportedly been used to make several arrests, some are not happy with how this technology is being used and fear it impinges on privacy rights and the Fourth Amendment. Indeed, Baltimore’s Office of the Public Defender has asked the Baltimore Police Department to stop filming citizens from the sky until the public is briefed on the program and defense attorneys are given access to the footage.

This technology is so cutting-edge that the limits of its legal application have not been tested in any court. As technological systems are used to detect beyond what is visible to the naked eye, the reach of two Supreme Court decisions will be put to the test. In 1986, the Supreme Court dealt with the issue of whether the Fourth Amendment was violated by California police who acted on an anonymous tip and were able to observe marijuana plants from an airplane 1,000 feet in the air. *California v. Ciraolo*, 476 U.S. 207 (1986). The Court decided that the Fourth Amendment was not violated by the naked-eye aerial observation of a private citizen’s backyard. The Court found that the Fourth Amendment does not require police traveling in the public airways at 1,000 feet to obtain a warrant to observe what is visible to the naked eye.

In 1989, the U.S. Supreme Court heard arguments in a similar case in which the Florida police received a tip that a person was growing marijuana on five acres of rural property. The police circled over the property using a helicopter and observed, with the naked eye, what appeared to be marijuana growing inside a greenhouse. The police then obtained a warrant and found marijuana inside the greenhouse. *Florida v. Riley*, 488 U.S. 445 (1989). The Court ruled that the accused did not have a reasonable expectation of privacy that included the greenhouse being protected from aerial view, and thus the helicopter surveillance did not constitute a search under the Fourth Amendment.

Notably, these two Supreme Court precedents did not address the use of cameras to conduct continual surveillance over an extended period or to detect activity not visible to the naked eye. If cities continue to use “eyes in the sky” to observe citizens, the U.S. Supreme Court may have to step in and decide whether the Fourth Amendment is violated by such extensive surveillance.

The use of this technology is limited only by the imagination and could easily become widespread as costs are lowered over time. For example, employers can use the technology to monitor employees, and insurance companies can use it to track and monitor key information related to claims. And, of course, the technology greatly expands the reach of private investigators.

While the technology clearly enhances surveillance capability, the question the court may ultimately have to answer is whether this technology is a path to enhanced public safety or to a dystopian future.